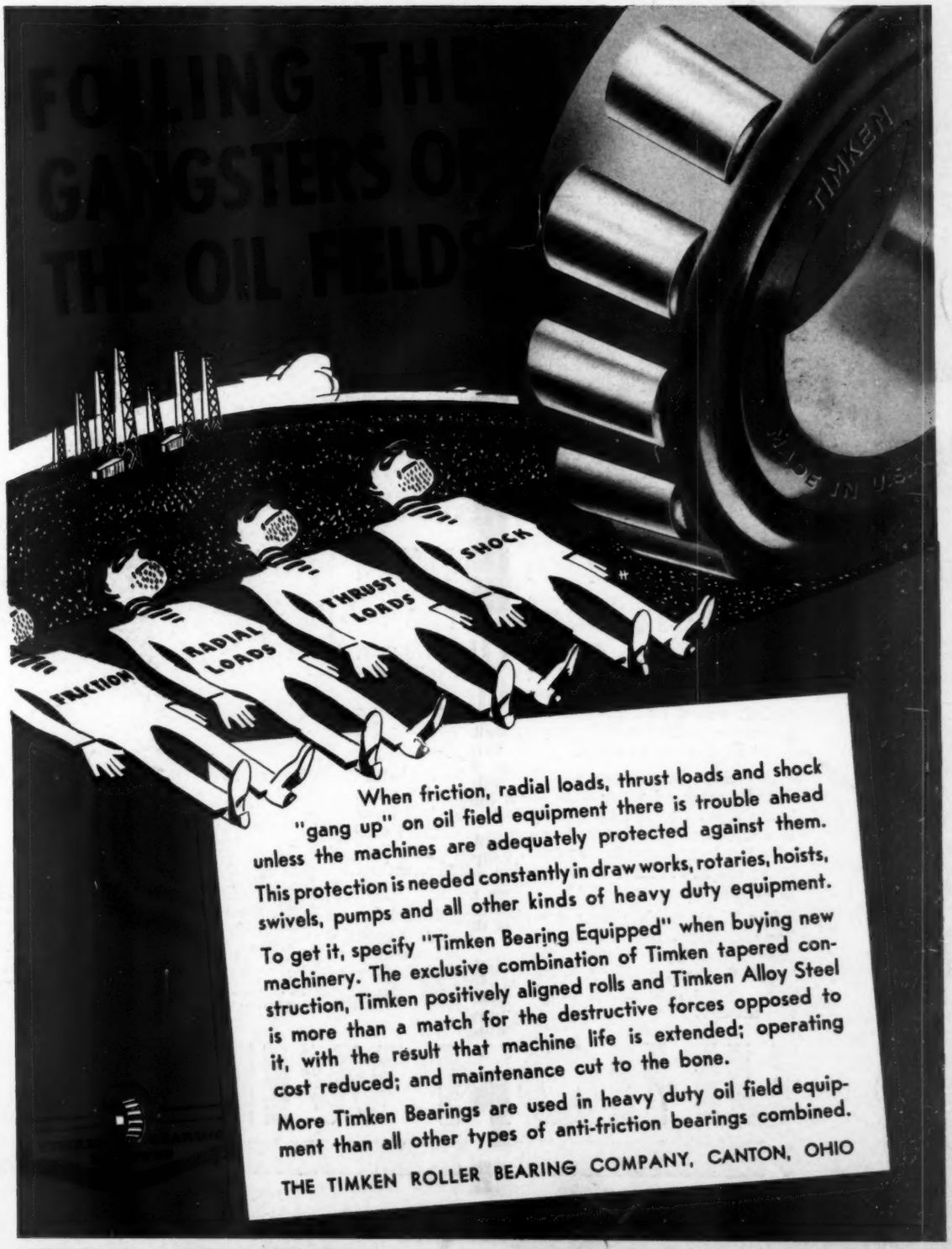
The OIL AND GAS JOURNAL

APRIL 23 1936

APRIL 23
1936

PRICE
5 CENTS



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In West Virginia—

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Ruffner Brothers' Cable-Tool Well

The early settlers in West Virginia obtained salt by evaporating water from the salt licks in the Kanawha River Valley. Here, in 1806, the Ruffner brothers started a well which they hoped would find the source of this salt water.

After digging by shovel to a depth of 17 feet they struck rock. To penetrate this rock, they utilized a chisel-like bit on an iron stem, attached by rope to a spring pole. By this means they deepened the hole in 2 years to 58 feet. Here was found the brine they were looking for.

To produce the brine they made a wooden casing by splitting, then hollowing out a long pole. The two halves were fastened together with twine. For packing, a skin full of flaxseed was tied around the base of the casing which was then inserted in the well.

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Fifty years before the Drake well was drilled, David and Joseph Ruffner of West Virginia had discovered the principle of cable-tool drilling. They drilled, cased and packed their salt well by an ingenious method which prepared the way for the great oil era yet to come.

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The photograph shows a well being drilled by Zogg & Zogg, Inc., in Kanawha County, South Charleston, West Virginia. The men, left to right, are K. S. Zogg, driller; J. E. Humphrey, Union Wire Rope Corp.; Jack Jones, driller; Wilber Strickland, tool dresser.

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APRIL 23, 1936
VOL. 34, NO. 49

Extra copies of special issues are reserved for subscribers' needs and may be purchased by subscribers at the price of 50 cents per copy

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TOUGH!

The sergeant is tough. He has to be. He has a tough job. And because he handles his job well he can put chevrons on his sleeve. That's the Army's reward for long and worthy service.

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Drop in Crude Inventories Is Good Sign

DECLINE in crude stocks, the first since February, is a cheering development. At the bottom of an unsatisfactory market structure, especially with reference to gasoline, has been the fact too much oil was being produced. Refining divisions of integrated companies endeavor to make a good showing by converting the flood of crude into gasoline and other products. The problem of getting rid of the gasoline is handed to the tankcar sales manager, who tries to sell at a profit, but in any event to make a fine gallonage record. This situation always has been productive of an unstable market.

Two Rodessa transactions in the last week tend to show how development of that field, demanding strong financial resources, is likely to move into the hands of large companies. The Standard Oil Company of Louisiana acquired the properties of the Haynes Production Company, including 3,000 acres of leases with 34 producing oil wells. Magnolia Petroleum Company bought 5,500 acres from R. W. Norton, Shreveport independent, whose deepening of a well in 1934 extended the Rodessa gas field and led to the opening of the big oil pool beneath it. In both these cases the former owners had cooperated in orderly development of the field. Not all operators are of that type, however, and in view of uneasiness felt over the outlook at Rodessa any incident pointing to increased insurance against a ruinous race to get oil above ground is likely to be viewed with satisfaction.

An important oil field in the heart of the Rocky Mountain range is indicated by a wildcat discovery of the South Park Oil Company in Park County, Colorado, center of the state. The nearest production is in the Florence-Canon City district, 55 miles to the southeast. The old Boulder field is 75 miles northeast. The hole filled at the rate of 1,300 feet an hour and began flowing, after which it was shut in.

Production 2,945,968

Increase 43,838

The Moore area in northern Cleveland County, Oklahoma, assumed additional importance when the third producer struck the prolific Wilcox pay. The new well, owned by the Sinclair Prairie Oil Company and others, flowed 1,304 barrels in 7½ hours. It is a half-mile south of the discovery and there are three other active operations in the field.

Kansas is witnessing an active drilling campaign. A survey shows 456 operations, including 296 drilling wells. Wildcats of special interest embrace two in Ellis County and one in Russell County.

The Cass County, Texas, area of the Rodessa field promises to match operations with the more developed parts on the Louisiana side of the line, developments indicate. A test by American Liberty Oil Company is being watched as likely to extend the Cass County area.

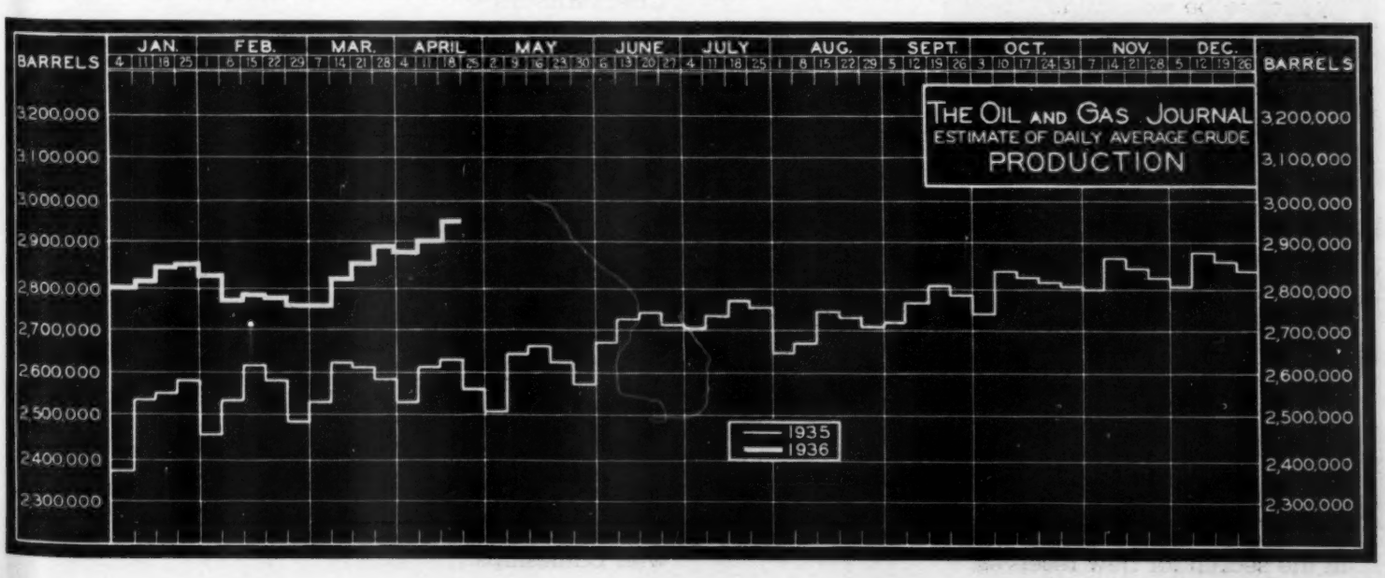
Daily Average Production for Week

	April 18 1936	April 11 1936	April 20 1935
Oklahoma City	162,600	153,800	176,325
Seminole-St. Louis	103,650	99,915	102,450
Remainder of state	303,450	296,000	258,350
Total Oklahoma	569,700	549,715	537,125
East Texas	451,278	450,047	467,529
West Texas	180,184	179,487	145,536
North Central Texas	84,280	83,194	90,624
Texas Panhandle	61,637	57,193	54,349
East Central Texas	51,684	48,979	50,065
Gulf Coast Texas	247,750	244,587	180,738
Southwest Texas	78,204	76,184	60,834
Total State of Texas	1,155,017	1,139,671	1,049,675
North Louisiana	66,150	61,615	22,985
Gulf Coast Louisiana	144,750	140,600	100,038
Total Louisiana	210,900	202,215	123,023
Santa Fe Springs	43,400	42,650	36,500
Long Beach	67,850	69,500	68,000
Mountain View	25,500	26,600	8,100
Kettleman Hills	79,250	76,900	55,500
Remainder of state	358,000	358,150	318,150
Total California	574,000	573,800	486,250
Kansas	147,750	148,550	146,523
Arkansas	29,960	30,125	30,205
Eastern fields	108,500	108,000	106,500
Michigan	33,901	32,744	39,023
Rocky Mountain area	116,240	117,310	103,330
Total United States	2,945,968	2,902,130	2,621,654

Crude Oil Stocks in U. S.

(BUREAU OF MINES ESTIMATES)

Week ending April 11, 1936	311,837,000
Week ending April 4, 1936	312,974,000
Week ending April 13, 1935	341,357,000



SPARKS FROM THE NEWS

Forecast

Attention given Rodessa by natural gasoline manufacturers suggests production may reach quarter million gallons daily by September.

Puzzle

If Bureau of Mines statistics are a violation of the antitrust act will Uncle Sam indict himself?

Poser

Suppose Madison, Wis., grand jury asks jobbers "Why should your profits be guaranteed?"

Test

It is claimed motorist cannot tell whether he is burning 10 per cent blend of alcohol-gasoline or straight gasoline. The motor knows the difference.

Taxation

Federal gasoline tax as a burden on farmers, business, industry and the general public is exposed in an article on page 81 in this issue.

Speed

In moving pictures of what goes on inside automobile engines, taken 5,000 per second, explosions appear to be slow affair.

Quality

Volume conscious executives thinking in barrels and tons may overlook possibilities in manufacture of chemicals expressed in pounds.

Lesson

Furnace oil distributors offering 1936-37 contracts. Recalling few weeks ago customers should not be hard to sell.

Competitors

Deeper drilling is beginning to rival wildcatting in the search for new reserves.

Improvement

Rodessa looks better as companies familiar with benefits of equitable proration take over properties.

History

Gasoline stocks said to be in "strong hands." The strongest have been known to weaken.

Reform

Chain store legislation in one state forcing oil marketing reforms being adopted voluntarily in other states.

Exploration

Search for oil widens. Two domestic companies are negotiating for Colombian jungle concession.

Conservation

All Texas operators are not gusher conscious. Two are to experiment with water flooding.

Revelation

Secret rebates in gasoline sales increasing. Earning statements probably will reveal these secrets.

Conciliation

Proponents of alcohol-gasoline blends say industry is firmly established and efforts will be to develop public acceptance and not compulsion.

Checkerboard

Governor Marland appears to be leading in Oklahoma City checker game. His opponents still have a few moves.

Custom

First reduction in crude stocks in several months is sure to start new speculation on a crude price raise.

Defense

As defense measure countries without oil could store fuel oil and build cracking units to be used only in emergency. Cost would be low compared with battleships.

Northern Louisiana Deeper Drilling Now Featured

By L. G. E. BIGNELL

Town lot drilling in Rodessa, La.

SHREVEPORT, La., Apr. 20.—The purchase of more than 8,000 acres of producing oil land in northwestern Louisiana, much of it in the Rodessa field, by subsidiaries of the Standard Oil Co. of New Jersey and Socony-Vacuum Oil Co. is as good a criterion as any of the very active interest in the possibilities of this section of Louisiana. R. W. Norton, an independent operator, of this city, sold 5,500 acres of his holdings to Magnolia Petroleum Co. of Dallas, Tex., a few days ago for a reported consideration of $10,000,000 and a one-fourth over-riding royalty. The second deal completed on April 17 involves about 3,000 acres in the Caddo Parish, Louisiana, end of Rodessa field, the Standard Oil Co. of Louisiana purchasing all of the stock of Haynes Production Co., Inc. There are 34 producing wells and one gas well on the property with five wells being drilled. The purchase included about 133,000 bbls. of oil in storage. The price was not made public.

These transactions, coupled with many minor deals involving producing properties as well as many blocks of prospective acreage, indicate the trend in this section of Louisiana and southern Arkansas. The Rodessa field, where the prolific pay was found at about 6,000 feet in a well deepened from the gas zone, productive for more than six years, was the start of this renewed interest.

Drilling wells in center of Rodessa, La.

Production has been for many years from shallow fields with but few wells more than 4,000 feet. The oldest oil field in northern Louisiana is the Caddo field near Shreveport discovered in 1903.

There were two principal reasons why deeper drilling has not been attempted in this region prior to about three years ago. The equipment used in the completion of the older wells was mostly of the cable tool type and suitable for comparatively shallow drilling. The second reason was the uncertainty of finding production below the Cretaceous formations and the lack of reason for making deep tests while oil was being found in other areas in large quantities supplying market demands.

When R. W. Norton deepened one of his wells in 1934, and in so doing extended the boundaries of the Rodessa gas field, many geologists predicted oil would be found beneath the gas zone and United Gas Public Service Co. of Houston, Tex., proved this true when it discovered oil in its No. 1 Young, July 7, 1935, proving the Glen Rose horizon of the Commanchean series productive.

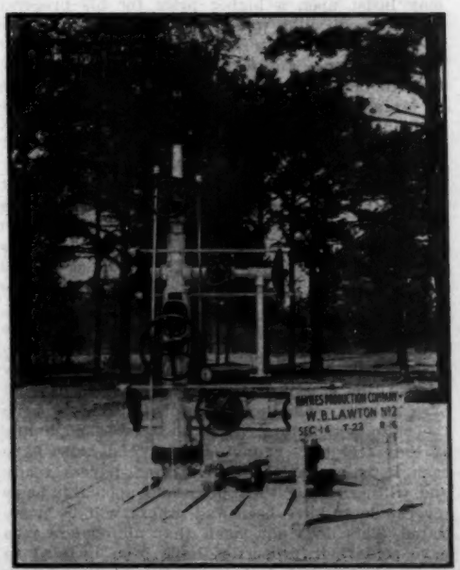
The importance of this discovery is hard to visualize to those not familiar with the general geology of this northern Louisiana and southern Arkansas region. The development of oil and gas fields has been based upon correlation of the various producing horizons opened in first one field and then carried to another area where it was known the same stratigraphic beds were present. In this manner deeper and deeper horizons productive of gas and oil have been found and when the drills had reached 5,500 feet and developed the gas reservoirs of Rodessa the operators were of the general opinion the ultimate economical depth of production in this portion of the state had been reached.

This was a practical view to take at the time for in 1929 and 1930 when the first gas wells were drilled to the 5,500-foot pay it required 11 months and cost about twice as much as wells now drilled in the same field to the 6,000-foot level. Present wells cost about $70,000 to complete and require about 45 days.

This improvement in drilling technique and the lowering of costs will lead to drilling many tests upon structures productive in the upper zones and where it is known the lower formations exist but it remains for the drill to prove whether oil or gas in commercial quantities is present.

When it became known oil had accumulated in the Glen Rose formation in the Rodessa field oil companies and independents began to consider the possibilities of finding oil in this formation in other fields and other parts of Louisiana where conditions might be favorable.

Acreage was acquired and geophysical parties sent into the areas to secure data and if this information was favorable the leases were held, if not they were allowed to lapse. This use of geophysics as a tool for the geological department has been frequently followed in northern Louisiana and it is reported there are now at least 17 geo-



Typical well hook-up in Rodessa

physical crews in north Louisiana of which one is operating a torsion balance, the others using the reflection seismograph method. The usual marker for the seismographic work is the layer of anhydrite just above the Glen Rose formation which usually reflects the changes that may be expected in the formations lower in the series.

As many of the older companies operating in this region owned large blocks of proven acreage, there is considerable land under lease in northern Louisiana, but the total is hard to estimate because land may be under option or actually under lease and then worked by geophysical methods and rejected so the actual status at any time is hard to determine, especially to prepare an estimate of total under lease.

Rumors have been heard frequently about overproduction in Rodessa, usually magnified by distance. At present there are about 6,500 acres of proven area in this field and it has been estimated the producing formation will yield about 30,000 bbls. per acre or the reserve of the field is about 200,000,000 bbls. Present allowable for the field is about 48,050 bbls. daily or about 350 bbls. per well for 137 wells.

Formation Pressure

The formation pressure is about 2,600 pounds at present at 6,000 foot depth and the temperature at this depth is about 190° F. This high temperature is probably due to the proximity of the oil zone to the fault which cuts across the field from northeast to southwest with the accumulation of oil on the upthrow side of the fault. High temperature was also observed in the gas wells completed at about 5,500 feet and this condition has also been attributed to the fault.

It is known the gas is escaping freely from the upper portion of the producing formation and while this has not yet caused serious drop of formation pressure it is realized there there is connection between gas and oil bearing formations and rapid withdrawal from any well or group of wells which will quickly be reflected in decreased rate of production in wells taking their fixed allowables. It is not exactly a gas cap condition but gas and oil are so intimately associated high gas-oil ratios will have serious effect upon ultimate recovery.

As the larger operators have been conversant with this production problem for some time and also know the right way to control this situation is to produce the oil at relatively low rates and at as low gas-oil ratio as possible they are using every effort to prevent any operator from opening up his wells because of special permits for extra production or for any other reason.

Most operators who desire to secure quick returns upon their investment are amenable to reason if the reasoning is backed by sufficient financial inducement. In other words, if an operator has obligations he must meet it is possible for him to secure financial aid from some larger companies interested in this field even though he may insist upon a higher price for his property than its real value would justify. This extra price has been called a "nuisance tax" by some but it is better to pay this extra price, if not too high, than to take the chances of ruining the prospects of large owners later being unable to secure the oil under their properties.

Restriction Probable

It is therefore quite probable Rodessa production will be restricted and kept within the limits set by the State Conservation Commission, and their allocation is based upon dividing Louisiana's allotment of the nation's demand of about 202,400 bbls. daily equitably among the many fields in the state.

Many of the operators in this new field have had experience in other fields where overproduction has brought ruinous price cutting and they realize this is a poor way to get their money out of a property and are therefore willing to keep their production rate within the prescribed limits. If they feel they cannot do this and must have cash it is probable they can find buyers ready and willing to pay their price and upon this basis several deals have been and others will be negotiated. This does not mean that all owners who have sold their properties have been inclined to overproduce but it does assure the whole industry the probabilities of Rodessa or any other field in Louisiana overproducing and offering oil at less than market price is rather remote.

All the upper producing horizons in northern Louisiana on known structures have been tested but since it has been proven the Glen Rose section of the Trinity horizon does contain oil in commercial quantities it is more than probable tests will be drilled to this and even deepen pays in the older fields. This situation is very similar to that in Oklahoma years ago when it was generally assumed no production would be found below the Mississippian formations until the prolific sand in the Simpson section was opened in a well near Mounds, and since then no test in Oklahoma has been considered complete unless it has penetrated the full Ordovician section, of which the Simpson is a member.

Part of Haynes Production Co. lease

A very evident sign of increased activity and the optimism of operators may be found in the equipment buying campaign now under way in northern Louisiana. Many complete new rigs have been purchased at prices ranging up to $75,000 per outfit based upon the assurance of additional drilling contracts. Supply and equipment purchases are not limited to drilling equipment but are active in all lines and the supply men and manufacturers are once more faced with the very practical problem of being able to make quick deliveries of purchases. The old equipment has been used up and it is not easy to get new equipment in quantity at the moment although all manufacturers are speeding up their operations and it is not anticipated there will be any shortage.

Marketing Practices Probe by Federal Grand Jury

WASHINGTON, D. C., Apr. 20.—A federal grand jury will be convened May 4 at Madison, Wis., to consider charges by the department of justice involving major companies engaged in marketing petroleum products, although charges will also be leveled at some small refiners and marketers, who joined with larger companies in efforts to stabilize markets.

Practices to come in for scrutiny, the result of complaints by the National Oil Marketers Association, composed of independent jobbers, will be the monthly forecasts of gasoline and crude demands by the Bureau of Mines, and other statistical reports by the bureau, the efforts to stabilize refinery gasoline markets through purchases of surplus gasoline, and the lowering of jobber and dealer margins.

The reduction in jobber margins, the jobbers contend, has taken practically all of their profit out of operating, alleging the action of the companies in making the reductions was so concerted as to lead to the conclusion there was an agreement among the companies.

Forecasts by the Bureau of Mines, it is argued, foster monopolistic practices as they tend to discourage refinery runs and stagnate the market at approximately the same percentage of volume. The ultimate result, the jobbers claim, will be final withdrawal of all independents due to loss of outlets through constriction of markets. It is also claimed that as the source of supply of most independent jobbers is the nonintegrated refiner, gasoline taken from the market through major company purchases removes gasoline they could have obtained.

While this particular feature was not contained in the complaint of the marketers to the department, it has been carefully investigated, as have the methods of determining prices in some trade publications.

Maintenance of uniform prices at retail outlets by filling station operators is also covered. The habit of marketers to follow the trade leader in almost all areas and post identical retail prices has been a source of puzzlement to the department investigators, it is said.

While the grand jury investigation is dependent upon the evidence, it is being predicted there will be no criminal indictments, but that any action will be in the nature of a cease and desist order probably issued by the Federal Trade Commission. It will cover only those particular practices found by the grand jury to be monopolistic.

Bureau of Mines Report

The effect of unfavorable weather conditions on gasoline consumption was reflected in the February report of the Bureau of Mines released last week which showed that the average daily domestic demand during the month was less than February last year. This is in contrast to the January situation which showed a large increase in refinery shipments over January, 1935.

Due to the favorable situation in January the accumulative totals for the first two months of this year indicate a substantial gain in motor fuel demand despite the decrease in February. For the first two months the gain in domestic shipments was 10 per cent over the same period in 1935 and 25.7 per cent in the case of exports. Production was 12.8 per cent greater.

Kerosene production for the first two months showed a decline over 1935. Exports declined but this decrease was more than offset with a 16.4 per cent gain in domestic shipments. There was a 16,000,000-bbl. increase in production of fuel oil and gas oil for the two months and a gain of about 13,000,000 bbls. in domestic and export demand.

Crude Petroleum.—The daily average production of crude petroleum in February, 1936, was 2,831,700 bbls., compared with an average of 2,865,200 bbls. in January and with 2,598,700 bbls. for February, 1935.

The feature of the month in crude oil production was the material decrease in output in California. Production in that state had been running above 650,000 bbls. daily since last September, but it was not until February that curtailment efforts were noticeably successful. Consequently, daily average production in California in February was 578,400 bbls., compared with 680,100 bbls. in January. The decline in California was mostly offset by an increase in Texas, where a general gain in production raised the daily average output from 1,066,400 bbls. in January to 1,124,100 bbls. in February. Louisiana's new record was 189,800 bbls. daily, of which Rodessa yielded 37,000 bbls. from about 75 wells.

Increased crude runs were reflected in the trend of crude oil stocks, the withdrawal increasing from 1,550,000 bbls. in January to 2,269,000 bbls. in February. Total stocks of refinable crude on February 29 amounted to 310,812,000 bbls.

Refined Products.—The effect of the heavy demand for fuel oil on the yield of gasoline was again pronounced and, although the average for February of 42.9 per cent was slightly above the average in January, it was below normal.

The daily average domestic demand for motor fuel in February was 945,000 bbls., compared with 944,000 bbls. for February, 1935. Exports of motor fuel declined materially in February but remained considerably above the level of a year ago.

The increase in motor fuel stocks in February was, despite the short month, the largest in history. Stocks of finished and unfinished gasoline rose from 62,613,000 bbls. on January 31 to 71,604,000 bbls. on February 29. With natural gasoline stocks, the net gain was 9,000,000 bbls.

Who Will Operate the Filling Stations?

Chain-Store and Other Legislation Forcing Major Companies to Curtail Retail Operations

The action of President Edward G. Seubert of the Standard Oil Co. (Indiana) last week in explaining to stockholders the expansion of its leasing plan of operating company owned and controlled stations served to further emphasize the important changes under way in merchandizing policies which is reducing participation in retail operations by major companies. The announcement from Madison, Wis., of a federal grand jury investigation, admittedly brought about at the request of a national jobbing group, was another indication that marketing practices are to receive attention from outside as well as the inside of the industry over the remainder of year.

President Seubert's statement in his annual report reflects a general condition which has been adopted on a more extensive scale by many of the major marketing organizations in the middle west. He said:

"Enactment of further chain store legislation led to a pronounced alteration in the company's retail marketing policy. For many years Standard of Indiana has been building up a system of company-owned and controlled stations providing carefully supervised, uniform service to the public of a type generally recognized as exemplary. The chain store tax law enacted in Iowa made continuation of the system impossible there. The stations could not have earned enough profit to justify payment of the drastic taxes imposed on integral units. It accordingly became necessary to turn back leased stations to their owners and to lease company stations to individuals so that all could be operated as separate outlets, not subject to the tax penalties. The company thus practically went out of the business of operating retail outlets in Iowa.

Results Surprising

"The results have been rather surprising. While it has been impossible to maintain uniformity of free service, and there has probably been some decline in the employment provided in the stations, the company's sales have not suffered. On the contrary, the quantities of products distributed to the same stations have measurably increased.

"On the basis of this experience, it has been decided to place the operation of company-owned stations as largely as possible in the hands of independent dealers, to whom the company becomes lessor, wholesaler, supplier, and adviser, instead of employer. Large numbers of stations in other states have already been converted into such dealer outlets, and in the course of this conversion many former employes have become dealers in their own right, able to develop their own retail business as they see fit.

"As the result of this new policy, the distributing set-up is materially altered. While the group still operated on last December 31 4,775 bulk stations as compared with 4,827 a year earlier, it had only 7,576 owned or controlled service stations as compared with 11,685. Further reduction of the number of owned or controlled stations has taken place in the early part of 1936. Connections with dealers have, on the other hand, materially increased, the number being approximately 20,500 as at the close of 1935."

The significant development revealed in this statement is that chain store legislation in Iowa designed to cripple large-scale merchandising operations has not accomplished its purpose so far as gasoline and motor oil marketing is concerned and has in fact given additional impetus to the movement of simplifying distribution of products, leaving the retail end to independent dealers. Conditions vary in different parts of the country and it is impossible to predict how far this trend away from retail distribution by integrated companies will spread.

In addition to the spread of chain store legislation by states and the threat of a national law, there have been several developments in recent months which have indicated the necessity of reorganization and retrenchment in oil marketing on the part of companies which occupy major or semi-major position in the distribution of motor fuels and oils. The federal social security act providing for unemployment insurance and old age pensions on which payments start next year, with several state laws already effective, is certain to prove burdensome to many oil companies if they continue present marketing policies. Employment in the producing, refining and transportation branches of the oil business is in line with averages of other major industries. In the case of oil marketing, however, in relation to volume of business it is relatively high and some companies now have more employes in that branch than in all other phases.

On a basis of the N.R.A. rulings of a year and two years ago and the recent U. S. Supreme Court decision in the West Virginia chain store case, in addition to those directly employed by marketing departments, all persons connected with controlled operations, such as the lease and agency, would be included as a basis for determining contributions under federal and state social legislation. Some legal phases of this problem have not been finally adjudicated, but developments to date indicate a liberal policy in applying this type of legislation, whose purpose is to protect as many employes as possible in regard to employment and old age security.

While there is no disposition on the part of oil companies to evade responsibility under these acts so far as the direct phase of their operations are concerned, it is not clear that this duty includes a large percentage of the several hundred thousand marketing employes. The fact that these marketing operations have not been generally profitable in recent years also tends to make employers reluctant to assume additional burdens in the form of social security payments.

Labor Problem

Another angle to this labor problem has to do with the regulations in regard to minimum pay, hours of employment, union activities and the large turnover due in part to variations in seasonal demands for gasoline and other products. Under the N.R.A., which governmental and labor leaders have indicated will be revived in some legal form, operators of company owned and controlled stations were at a distinct disadvantage in competing with small jobber and dealer organizations. Many of these problems have continued since the demise of the N.R.A. In the retail end the advantage in costs generally lies with the dealer operated units. There are thousands of examples in which the company stations observing minimum pay, maximum hours of employments with constant interference from union organizations has to compete with a station on the same street or highway operated by a dealer working long hours aided by members of his family or a small amount of cheap help.

There are other angles in this matter of company owned versus independent station operations, but in the matter of costs the advantage in most cases lies with the latter. In this connection executives of two companies operating in Iowa have pointed out there has been very apparent decline in service after their company owned and controlled facilities were turned over to dealers. This applied to all the free services and the general appearance of the stations. This development has been a matter of concern to some operators as to the ultimate results. Other companies are satisfied and have raised the question as to whether the industry generally has not paid a high price for its superservice at company owned facilities with little real appreciation from its customers who always flock to cut-rate operators and who have not attempted to stop the passage of unfriendly legislation.

Holliday Warns N. P. A. to Be Careful of Panaceas in Marketing Problems

By R. C. CONINE

CLEVELAND, Ohio, Apr. 20.—Oil marketing still has many unsolved problems despite improvements in the oil industry generally but those engaged in that branch of operations should maintain a skeptical attitude toward some of the current panaceas and beware of any sweeping policies of reform.

The high-speed diesel engine is strengthening its position in several phases of industrial and transportation power equipment but the increase in demand for fuels is certain to be gradual with any concern on the part of the oil industry in regard to furnishing these fuels, unjustified.

Gasoline is becoming more and more a staple commodity and its sale should be divorced from claims as to special properties. The filling station of the future will handle several brands with no restrictions as to the sale of other petroleum products. New uses for petroleum products present opportunities for sales organizations to expand profits. The foregoing were some of the thoughts brought to eastern refiners and marketers assembled here this week in connection with the annual meeting of the National Petroleum Association. Several other subjects were discussed in prepared papers.

"I am not a prophet and I don't pretend to predict what will happen to the oil industry as its experience proceeds to parallel that of the railroads," said Charles L. Suhr, president of the association and executive head of the Pennzoil Co., Oil City, Pa., in the keynote address. "I only know that the rail carriers are now operating under the Interstate Commerce Commission and that there now is much more sentiment for exercising still more rigid regulations than for releasing the roads to unsupervised and independent operations."

Holliday's Review

W. T. Holliday, president of the Standard Oil Co. (Ohio) reviewed the developments in the marketing of petroleum products in recent years starting with the spread in guaranteed margins to jobbers and dealers in the late twenties. He referred to the secret discounts, coupon books, commercial discounts and other concessions which resulted from these wide margins. He said there was some improvement in this situation prior to and during the NRA, but since the latter's demise in June, 1935, the practice was spreading again. He also said that a large number of new stations were being built.

He questioned the soundness of the trend on the part of large companies to get out of the retail end through leasing arrangements with dealers and jobbers. He particularly questioned the so-called "Iowa plan" in which due to a state chain store tax, major oil companies have leased their company owned and controlled stations to dealers. Regarding this he said: "Is the so-called 'Iowa plan' the only answer? Must all stations be leased out to dealers and the marketing branch of the industry thrown into the chaos of a leaderless mob?

"Some refiner-marketers seem to have the philosophy that that is the only answer. They assume that the tank-wagon and tankcar prices can be a sort of inflexible Rock of Gibraltar, that the dealers and jobbers will determine their own margins and that the tankcar and tank-wagon prices will not yield to the pressure.

"Does anyone seriously believe that there can be a general and extended decline of the retail price without a depressing effect upon the whole understructure of prices in the industry? If a brand supplier finds that his jobber or dealers in a particular locality are being forced into bankruptcy by the narrowing of the spread between the wholesale price and the actual realized retail price is it to be expected that that supplier will retire from that locality and reduce his production accordingly? We know very well that he will not, and he will maintain his distribution, either by an open reduction of his wholesale price or by a secret subsidy. History indicates that secret subsidies cannot become very general without being met by a decline in the price which is affected. The general degradation of price is the inevitable result of special concessions and discounts."

New Business

Arthur Gow, of the Curtis Publishing Co., reminded the refiners that they had done very little to expand their own markets. The automobile, airplane, oil heating installations, he said, have until recently been promoted outside of the oil business. A few companies are wise enough to build up new business in these fields, he said, by strong promotion and advertising. Mr. Gow pointed out that a general plan of inducing more travel on the highways would stimulate sales.

Joseph Geschelin, of Detroit, summarized the import of his discussion as follows:

"The position of the automotive high-speed diesel is well established today, including in the ranks of producers practically every important engine manufacturer, many important truck makers, and the largest tractor and industrial units. The diesel has been accepted beyond a doubt by many influential operators and has gained its largest prestige on the West Coast where long distance hauling with diesel power has had a history of over five years. Although at present the volume of diesel engine production is low and the price high, a vast improvement should be noted from now on, culminating in perhaps a radical increase in volume and consequently lower costs within five years. While I would not be inclined to yield on the practical aspects of the limitations to the application of diesel power, remember that the market for the diesel will come from a group of vehicles of 2½ tons and upwards in capacity in which the yearly production is at least 20,000 units and further that the number of such units now in service is upward of 175,000. Then consider too that the demand for diesel power for tractors and industrial equipment reaches a sizeable figure. Consequently, even a conservative estimate of the potential market places the diesel in the category of a very large producer.

Fuel Situation

"The fuel situation seems no longer a nightmare. We have a fairly definite idea of the effect of diesel power on the producer's economy; we no longer have to speculate as to the fuel tax, since it's already here; and there is a definite cooperative movement afoot to solve the matter of fuel specifications.

"The big problem and one which demands immediate action is that of distribution of specification fuel to the consumer. If the petroleum industry or any of its individual members sees in this development an opportunity for new business, now is the time to make a lasting impression on your prospective customers by going out of the way, if need be, in order to give service."

John G. Winant, three times governor of New Hampshire, discussed the federal social security act. His discussion of the basic requirements which must be incorporated in a state unemployment compensation act was expanded upon by Ralph G. Harder, of Shell Petroleum Corp., who said that it is up to the states to provide such operating details as are best suited to the conditions within their borders.

John H. Geisse, director of the aeronautics development section of the U. S. Bureau of Air Commerce, outlined the growth of interest in private flying.

Discussing federal finance and taxation, Ellsworth C. Alvord, Washington attorney, outlined changes which should be made in the budget system. He suggested a fixing of maximum expenditures to be made during the fiscal year, and control of all appropriations and authorizations under the limit fixed or require all calls for funds to carry their own methods of financing. "Balance the budget honestly and actually," he said, "by eliminating all waste and useless expenditures, and by revising our revenue laws so that receipts will at least equal expenditures, including adequate provisions for the retirement of debt."

Gas Bill in Committee

WASHINGTON, D. C., Apr. 20.—Senator Burton K. Wheeler, Democrat, Montana, has introduced in the senate a natural gas regulatory bill similar to that sponsored in the house by Representative Lea of California. The senate bill was referred to the Interstate Commerce Committee of which Senator Wheeler is chairman.

The house bill is in the hands of the subcommittee of the Committee on Interstate and Foreign Commerce which has concluded hearings and is preparing a report. At the house hearing Ralph W. Gallagher of the Standard Oil Co. (New Jersey) said he could see no necessity for federal power commission jurisdiction over affairs of interstate companies. He complained of the undue burdens they would be compelled to shoulder.

"It is apparent," he said, "that in the states where the greatest amounts of natural gas are consumed there is no lack of authority in the state commissions to see that the ultimate consumer is charged a fair rate, and in this connection to make sure that the gas rate is not too high.

"The question I desire to present to the committee is whether the advantage of the added work and costs that would be imposed upon all natural gas companies throughout the United States, by their subjection, as proposed in this bill, to regulation by the federal power commission, without any relief from very complete and costly regulation of operation and rates by all state regulatory bodies, would be offset by any measure of advantage to the public resulting from the proposed legislation."

Representative Cole (Democrat), Maryland, presiding at the hearings, asked why the state commissions, in annual meeting last fall, adopted a resolution calling on congress to enact a law to assist them in regulating the pipe line companies. Mr. Gallagher replied he presumed a majority of the representatives at that session had nothing to do with gas production or transportation.

Floyd C. Brown, vice president and general manager of the Natural Gas Pipe Line Co. of America and of the Texoma Natural Gas Co. in northwest Texas, told the subcommittee he could not "see any advantage that will accrue to the consuming public or the pipe line companies" if the legislation were enacted.

Charles W. Steiger, attorney for the Kansas Corporation Commission, expressed the view the pending legislation would be dropped and congress should "start at the other end"—legislation to control production and promote conservation.

Over 150 Oklahoma City Operations; Election Set for May 12

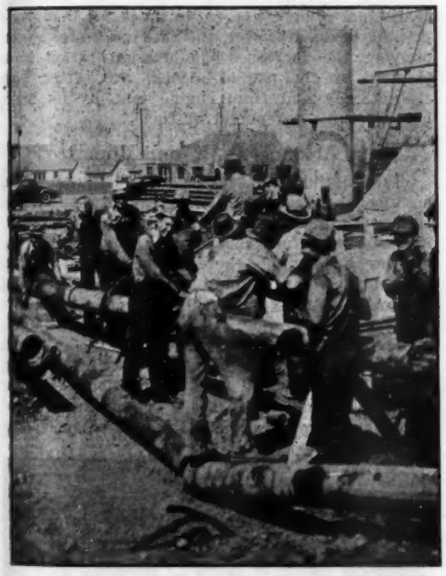
View of State Capitol showing proximity of operations in new drilling zone

By HAROLD K. IHRIG

Oklahoma City council has set May 12 for a special oil extension election on all east side property outside the drilling zone except the wholesale district, University Hospital land, Lincoln Terrace and state school land north of Twenty-third Street. Should this new zone be voted into the present drilling zone it will open antoher large area within the city limits and perhaps create a situation paralleling that north of the capitol in activity and scope.

Work on five tests on state land near the capitol, started by Governor Marland under protection of marial law and in defiance of the Oklahoma City commission, has been taken over by the Sunray Oil Co., which was awarded a lease on the state land.

District Judge Ben Arnold Monday dismissed Oklahoma City's injunction suit seeking to halt drilling on state lands. Judge R. P. Hill granted



Assembling gas discharge pipe

K. & L. Petroleum Co. a temporary injunction restraining the city from interfering with drilling south of the capitol on privately owned acreage outside drilling limits. The city is expected to appeal both decisions, but drilling may go ahead.

The rapid development of the newly opened extension within the northern limits of Oklahoma City just north of the State Capitol and the governor's mansion continues apace and activity has reached a stage seldom seen in these days when orderly and systematic procedure is usually the watchword, but—the boom is on! Work is being pushed feverishly and the demand for material and men is increasing with each producer completed.

There are at the present time 58 drilling wells, 33 locations on which derricks are being built or on which rigging up work is in progress, and 68 staked locations where cellars or slush pits are being dug. That makes a total of 159 active locations in the small area north of the State Capitol. The 20 wells completed boosts that total to 179 total operations.

The fact that there is a shortage of water in the Oklahoma City reservoir, from which a number of the first wells in the north end of the field were drilled, has forced the city to refuse delivery of water to drilling wells. This has caused an extensive water well drilling campaign paralleling the other operations in immediate importance and activity. These wells will be drilled to approximately 700 feet and water lines laid to as many drilling wells as the water well is capable of supplying. The method of producing these water wells will vary and it is not now known how the majority of these wells will be pumped.

The field is just now also experiencing a shortage of gas used as fuel in drilling boilers. Those gas lines already laid into the area are taxed to capacity and there are a number of drilling rigs shut down for lack of fuel. This situation may be remedied to some extent by use of a new burner which it is said operates on 3 pounds line pressure. As most of the wells are being drilled by steam equipment the shortage of fuel and water is an acute situation

The diversity of the type of drilling rigs being used is interesting. They vary from old type steam rigs through the newest steam equipment available to old and new electric rigs, some of which are using purchased power while others of the diesel-electric type are very well adapted to the particular conditions now existing in the field as they are not dependent on a supply of gas for fuel, and do not require more than 500 bbls. of water daily.

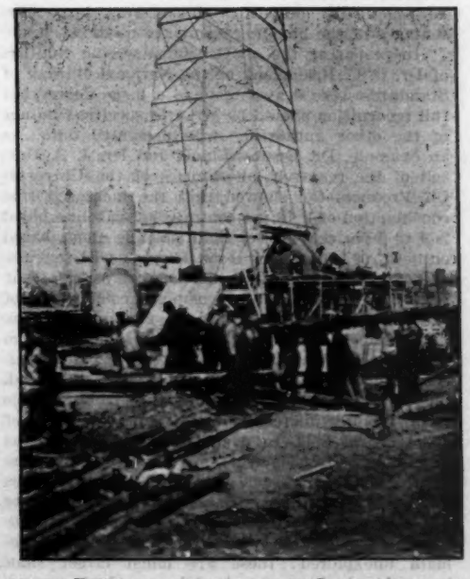
All gas, water and mud lines must be laid through residential sections, which requires a great deal more work and planning than ordinarily necessary in fields outside a city. All lines must be laid beneath the municipal water, gas and sewage lines and as they must be put into a ditch that affords at least 48 inches of cover over the lines it entails a great deal of work to complete even this part of the project.

Only the latest type of surface equipment is being used. The derricks are the conventional steel rotary derricks but in every instance they are being set upon steel sub-structures which provide suitable bases for pressure control drilling-in methods for completion. This is necessary because of the low bottom-hole pressure now existing. It is necessary to drill into the pay sand with a fluid column whose effective head will be lightened by the injection of gas into the fluid as it is pumped down the drill pipe.

While operators are nearly assured of production in those wells now being drilled there is still a considerable area within the extended zone west of that now under development that will not be developed until the completion of what now appears to be two key wells. These wells are Barnsdall Oil Co. No. 1 Banks-Geyer, SE SW SE section 15, Township 15n, Range 3w, and Anderson-Prichard No. 1 Wheeler, SE SW section 15, Township 12n, Range 3w. They are considerably ahead of the surrounding wells and should be completed well in advance of the majority of them. From the geologic information obtained from these two wells it will be possible for geologists to map accurately the producing formation between them and the wells already producing on the east side of the extension, and by projection to predict rather accurately the extent of the pay sand in the now idle west side of the new extension zone. Should the two locations prove productive it is very probable at least another 100 locations will be started to the west and south to Twenty-third street which will perhaps cause starting additional locations on the state land adjoining.

Drilling sites are more congested in this new extension than were those in the south side of the city. It has been reported that in one instance five wells will be drilled on space covering only one-half of a city block. Getting derricks, boilers, slush pits, separators and tank batteries in this small area will take all available space. In a number of instances beautiful homes have been moved from their lots and derricks and slush pits built or dug in their place.

The practice of flowing wells and allowing the gas to escape into the air has aroused comment and a survey will be conducted throughout the zone to determine the present gas-oil ratio and plans for future operations will be based on the findings. State officials have requested the Corporation Commission to reduce the amount of gas permitted to produce a barrel of oil to prevent waste and to conserve reservoir pressure for future production. A general committee will be appointed by the Corporation Commission to make recommendations. A sub-committee headed by C. V. Sidwell, superintendent for British American Oil Producing Co. has been appointed to assist in this work. Operators in the mansion area have asserted no gas will be popped into the air unless absolutely necessary.



Raising separator vent line riser

Chemists Disagree on the Use of Alky-Gas Blend as Satisfactory

KANSAS CITY, Mo., Apr. 20.—"Why did we get interested in the use of alcohol as a motor fuel?" That was a most logical question to inject into the discussion which followed the presentation of papers on the subject of alky-gasoline before the petroleum division of the American Chemical Society in convention here this week.

Even the proponents of ethyl alcohol blends fail to claim any marked improvement in motor performance or lower operating cost to the consumer while opponents of their use say they cause an increase in fuel consumption, multiply operating difficulties with respect to starting, acceleration and vapor lock and cost more than gasoline of the same antiknock value.

In this controversy it is apparent the problem of alky-gas must be classed as "technico-economic" and cannot be settled by the presentation of operating data alone.

Accepted Views

To the end that basic truths be presented regarding the performance of alcohol-gasoline blends in the present day motors, experimental data were presented which, when briefly summarized, indicated:

1. Motor fuels made as a blend of ethyl-alcohol and gasoline have no advantage over straight gasoline.

2. Alky-gasoline blends can be used satisfactorily if full advantage is taken of the technical information available for designing the motor and adjusting carburetor settings.

3. The use of small percentages of ethyl alcohol in the blend is more advantageous than larger amounts from the standpoint of maximum power and acceleration for a minimum fuel consumption, ease of engine starting and warming-up.

4. Larger percentages of alcohol are favored, or the reverse of the conditions outlined in (3) when considering the effect of the addition of alcohol to gasoline regarding the tendency of the blend to vapor lock or separate in the presence of water.

5. Compromises must be made to find an optimum per cent of alcohol to be used with gasoline to best meet average motoring operating conditions.

6. The alcohol used should be essentially anhydrous but by employing a suitable blending agent the water tolerance can be markedly increased, although the ethyl alcohol used must still be practically anhydrous unless very large percentages of the blending agent are used.

In preparing the above summary, the findings of Dr. O. C. Bridgeman of the National Bureau of Standards were drawn upon to a large degree but full recognition should be given to specific findings of the other authorities who presented data. As an example, Dr. Gustav Egloff and Dr. J. C. Morrell of the research laboratories of the Universal Oil Products Co. showed that the increased fuel consumption of a 10 per cent alcohol gasoline blend is 4 to 5 per cent higher than gasoline alone, based on both road and block tests. They showed that the use of alcohol tended to increase corrosion of the engine parts and that incomplete combustion of the alcohol would be especially serious since the incomplete burning of ethyl alcohol tends to form organic acids. Then, as if to strike at the "technico-economic" problem involved, Doctor Morrell read, in part: "Each year the accumulated oil reserves have steadily increased from the 1900 level of 1,000,000,000 bbls. to over 13,000,000,000 bbls. as of January 1, 1936; while in the last year alone approximately 2,000,000,000 bbls. of oil reserves have been uncovered. In connection with future discoveries, more than 1,000,000,000 acres of geological formation in which oil may be found remain unexplored; these are much larger than have already been examined by our best current methods. A secondary source of oil rests in the vast supply of coal available in the United States, which may be converted into motor fuels and lubricants by a number of methods, such as hydrogenation, water-gas reaction, and the cracking process. At the present rate of consumption, there is sufficient coal in the United States to satisfy our oil

Per K. Frolich, Standard Oil Development Co., points to something interesting enough to take Gustav Egloff's attention off a report and bring a smile to Jacques Morrell, both of the Universal Oil Products Company

requirements for approximately 10,000 years. In 1935 the total consumption of gasoline was over 19,500,000,000 gallons for the 26,000,000 motor cars and trucks in operation. For a 10 per cent alcohol-gasoline mixture, this would call for 1,800,000,000 gallons of anhydrous alcohol. Based upon current prices of corn and the cost of alcohol production, the cost of the alcohol in a 10 per cent blend would be approximately 5 cents per gallon.

Economic Problem

It was on the basis that the use of alcohol gasoline would prove most beneficial to society generally that Dr. Leo M. Christensen reviewed the work on that subject that he had directed at Iowa State College. He took the position that since the economic crash of 1932, during which the price of corn went to an absurdly low level, alcohol-gasoline blends have been perfected to a degree where they are fully acceptable. He fortified this statement by saying that 40,000,000 gallons of alcohol-gasoline have been sold in the United States in the past four years. In that time, he said, there was no complaint from customers that water had caused a separation of the alcohol and gasoline nor that engine corrosion had taken place. It was apparent also that he favored limiting the quantity of alcohol in the blend to 25 per cent. Beyond that he indicated the public would become critical as has been witnessed in France where 50 per cent blends are used.

Defending the use of alcohol in limited percentages from a technical standpoint he concluded by saying that the objective of the movement to further the use of ethyl alcohol in gasoline as a motor fuel was to gain public acceptance for these blends. He claimed that the pioneering work in preparing the alcohol for use as a motor fuel was largely past and that the business of manufacturing and marketing alky-gas had been well enough established to be accepted as an operating unit, along with refining in supplying suitable motor fuels to the motoring public, particularly in the agricultural states where the sale of such fuels is both economical and logical.

Following the presentation of data showing the physical-chemical properties of alcohol blends by Doctor Christensen, similar data derived by L. C. Lichty and E. J. Ziurys at the School of Engineering, Yale University, were presented and the conclusions of these authors indicated that: "Only a slight increase in power is possible by substituting 190 proof alcohol for gasoline as a fuel in an internal combustion engine, which checks the theoretical analysis.

"Approximately 60 to 65 per cent more alcohol, by weight, is required to produce the same power as gasoline in a given engine. This represents about 50 per cent more fuel on a gallon basis, for the same power output.

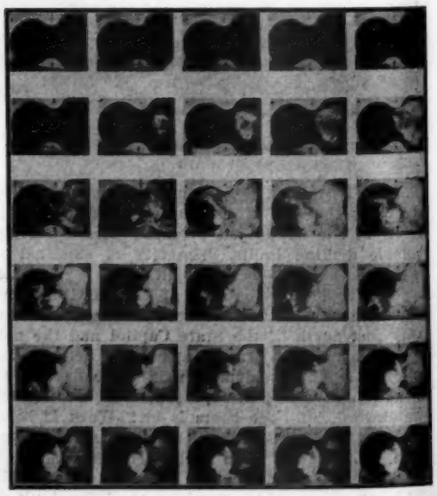
"Larger fuel orifices are required in carburetors for alcohol.

"Higher compression ratios can be used with alcohol although the same compression ratios can be used with gasoline if doped with antiknock compound, compression ratios up to 8:1 being used in these tests. However, the fuel economies accompanying the increased compression ratios made possible by the use of alcohol are offset, both theoretically and from engine test, by its lower heating value per pound of fuel."

Alcohol, As, If and When

Terminating the session in which the papers on alcohol were read, Dr. G. G. Brown of the University of Michigan and chairman of the meeting said with full sincerity: "From the information we have gained here it appears to me that alcohol fuels can be used as, if and when all of the gasoline from oil, coal and shale will have been made."

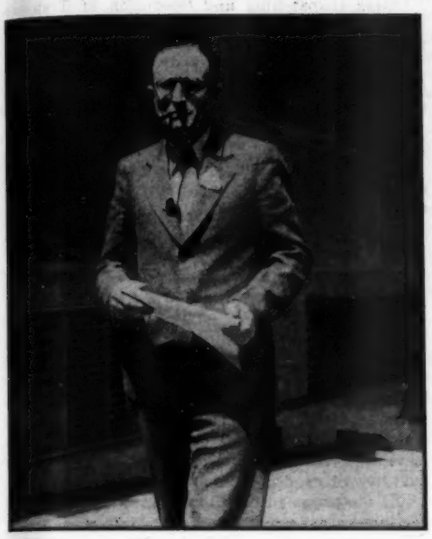
The field of polymerization and potentialities held for future development were outlined by Dr. Gustav Egloff when he said: "There are over 1,000,000,000 gallons of 95-100 octane gasoline and 8,000,000,000 gallons of 81-83 octane polymer gaso-



Lloyd Withrow, General Motors, showed for the first time, moving pictures of the flame travel during the explosion of gasoline vapors in an engine. The above series, reading from left to right, shows the sparks and then the progress of the flame. Pictures were taken at the rate of 5,000 per second

# of Alcohol-Gasoline Motor Fuel for Modern Cars

By W. T. ZIEGENHAIN



J. B. Hill, Sun Oil Co., leaves the meeting

line potentially available in the United States each year from hydrocarbon gases. As the demands of the automobile and aircraft industries increase, the production of these fuels must increase for with engines of higher compression ratios and higher specific power output being designed and built the octane rating of gasoline must be increased to keep pace. Since 1935 the automobile top speed has increased from 60 miles per hour to over 100 and the cruising speed of airplanes has been increased from 80 to 260 miles per hour.

"Increased speed is not the only factor influencing the use of high octane gasolines. Experimental tests have shown that a gain in power output of 20 per cent to 30 per cent is possible with 100 octane fuel as compared with 87 octane commercial gasoline when used in engines designed to take advantage of the better fuel.

"One of the greatest advantages to be gained from polymerized gasoline is its greater chemical uniformity. Such single hydrocarbons as iso-octane can be made by present day practices which were not available a short time ago.

Doctor Egloff then discussed the three polymerization processes in operation at the present time, two of these processes being of the thermal type and one of the catalytic type.

In presenting the specific data particularly that discussed the catalytic polymerization of ethylene the work of Dr. V. N. Ipatieff and B. B. Corson of the Universal Oil Products Co. was reported by Doctor Ipatieff. He described the pilot plant in which the experiments were made, discussed the characteristics of the change and the products. He chose to point out that under the conditions employed polymerization was not the only reaction taking place. Since the products were not only made up of polymeric olefins but included paraffins, both aliphatic and cyclic, as well as aromatic hydrocarbons, the nature of the product he contended required the occurrence of several reactions and he enumerated them as polymerization, cyclization, dehydrogenation and hydrogenation. He chose the term "conjunct polymerization" to describe the change in order to differentiate from pure polymerization.

"It is assumed," he said, "that the master reaction, in this case polymerization, furnished the energy necessary for the other reactions."

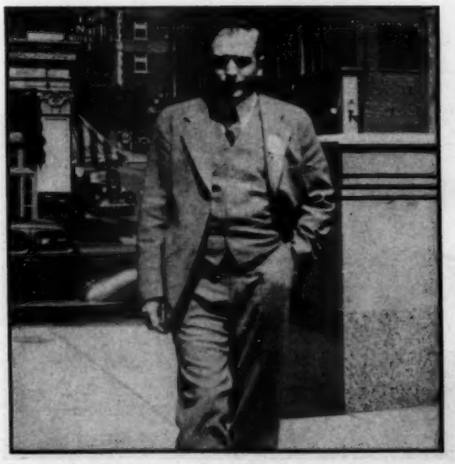
In carrying out the experimental work, ethylene of 98 per cent purity was used, the 2 per cent impurity being mainly ethane. The exit gas was mostly ethylene (about 70 per cent) together with ethane, butene, iso-butane, higher hydrocarbons and a small amount of hydrogen. The production of liquid polymer ranged from 0.01 to 0.03 gallons per hour per pound of liquid phosphoric acid catalyst, depending upon the operating condition. The yields of liquid polymer reported ranged from 7.1 to 8.0 gallons per thousand cubic feet of gas and the yield of 100° F. initial point, 400° F. endpoint gasoline, ranged from 4.6 to 4.7 gallons per thousand feet of gas. The vapor pressure of the resulting gasoline at 100° F. was 6½ pounds.

While auto and airplane motor fuels furnished the basis for most of the discussion a paper was read as prepared by G. D. Boerlage and J. J. Broeze of the N. V. DeBataafsche Petroleum Maatschappij discussing to conclusion the desirable characteristics of diesel fuels. It was pointed out that a low viscosity volatile fuel of high cetane number by no means guarantees better results as to power or economy, although of course it is good for starting and smooth running. The authors pointed out that at high loads and temperatures evaporation occurs too fast.

Lubricants

Lubricating oils, as well as motor fuels, came up for discussion before the chemists and the position of modern motor oils was outlined by Bert H. Lincoln in a paper he prepared with Gordon D. Byrkit and Waldo Steiner, all of the Continental Oil Co. He pointed out that the general trend is toward the use of less viscous oil and that by making bearings of the cadmium-silver and copper lead types which are easily corroded by the oxidation products of many mineral oils the choice of the lubricant is all important. The problem of lubricating modern cars was briefly covered by the authors in the following paragraph:

"The need for improved lubricants is generally recognized and recently a wide variety of new oils intended to meet this need has been produced. One type of improvement involves merely an increased degree of refining or removal of so-called impurities. This super-refining has usually been obtained by means of a selective solvent which removes asphaltic and naphthenic components. The resulting product is improved from the viewpoint of viscosity-temperature gradient and sludging characteristics. The super-refining, however, removes the polar compounds which give oiliness and the so-called oxidation inhibitors which prevent or retard the formation of corrosive oxidation products. It therefore appears that a fully satisfactory lubricant cannot be prepared by highly refining a petroleum oil."

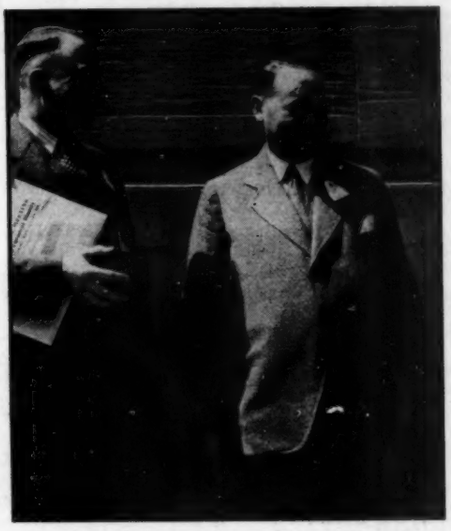


Secretary C. R. Wagner, Pure Oil Co., on his way to another A.C.S. conference

Metallic Soaps

On the subject of additives, C. J. Boner of the Battenfeld Grease & Oil Co., stated, in part:

"Of eighteen metals combined with fatty acids, nine gave metallic soaps which in turn produced lubricating greases that were worthy of consideration. While the entire metal field was not covered, indications are that divalent combinations furnish the most promising and satisfactory bases



L. M. Christenson and W. J. Hale, chemists

for lubricating greases. Five of the metals in question, magnesium, calcium, strontium, cadmium and mercury, being in group 2 of Mendelieff's Periodic Arrangement of the Elements, are divalent. Three others, cobalt, lead and nickel, have divalent compounds. While the remaining metal, aluminum, according to the opinion of McBain & McClatchie does not furnish a trivalent soap but rather a mono or divalent. Thus we may conclude that divalent metallic soaps have the greatest possibilities as grease bases.

Soaps of four metals, aluminum, cobalt, magnesium and nickel, gave greases which were clear or translucent, while the soaps of cadmium, calcium, lead, mercury and strontium, gave opaque greases. Since the first four are metals of comparative low atomic weight and thus the metal content of their soaps is low, it seems probable that a low percentage of metal in soaps used in lubricating greases will tend to give a more nearly transparent grease structure.

Study of the consistencies of greases obtained indicate that where the metal is more basic the softer the consistency of the thickened mineral oil.

Calcium and strontium soaps were the only ones where it was shown that water was required to hold the soap in suspension. With other soaps in general one-half per cent of water tended to break down the structure.

Finally the meetings of the division were appropriately closed by R. R. Mathews, genial chairman of the committee which committee arranged for the division's annual dinner. At this dinner the concluding paper was read by Tom Collins covering the subject "Modern Business, and the Ease With Which Executives Give of Their Chemist's Time."

Natural Gas News

Natural Gas Program

The following program has been announced for the annual meeting of the Natural Gas Department of the American Gas Association at the Baker and Adolphus Hotels in Dallas, Tex., May 5-8.

May 5

9:30 a.m.—Meeting of main technical and research committee and subcommittees.

2 p.m.—Opening remarks by Chairman William Moeller, Jr., Natural Gas Department.

Introduction of the mayor of Dallas—R. C. Soper, president, Dallas Gas Co.

Address of welcome—George Sargent, mayor, Dallas, Tex.

Address of the chairman—William Moeller, Jr., Southern California Gas Co., Los Angeles, Calif.

Address—L. B. Denning, president, American Gas Association, Dallas, Tex.

Address—Alexander Forward, managing director, American Gas Association.

Report of program committee—A. E. Higgins, secretary, Natural Gas Department.

May 6

9:30 a.m.—Report of main technical and research committee—H. C. Cooper, chairman, Hope Natural Gas Co., Pittsburgh, Pa.

Report of gas measurement subcommittee—Thomas R. Weymouth, chairman, Columbia Gas & Electric Corp.

Report of pipe line subcommittee—H. D. Hancock, chairman, Cities Service Co.

Report of gas well deliveries subcommittee—N. C. McGovern, chairman, United Gas Public Service Co., Shreveport, La.

Address—Dr. John W. Finch, director of U. S. Bureau of Mines.

2 p.m.—Natural Gas Utilization and Sales Promotion—J. V. Strange, chairman.

"Importance of Commercial Gas Sales to the Natural Gas Co.," speaker to be selected.

"Selling Improved House Heating for Better Customer Satisfaction and Larger Company Revenue," C. K. Patton, new business manager, Dallas Gas Co., Dallas, Tex.

"How Much Free Appliance Service Can Natural Gas Companies Afford to Give," H. W. Geyer, Southern Counties Gas Co., Los Angeles, Calif.

"Reaching Non-Home Owner for Water Heating," F. M. Rosenkrans, new business manager, Gas Service Co.

2 p.m.—Natural Gas Production—B. M. Nowery, chairman.

"Drilling and Completing Gas Wells," J. H. Dunn, production engineer, Lone Star Gas Co., Dallas, Tex.

"Methods of Drilling Wells in Under Pressure," R. W. Hendee, president, Oklahoma Natural Gas Co., Tulsa, Okla.

"Operation and Maintenance of Gas Wells from the Viewpoint of Conservation," S. W. Meals, president, Carnegie Natural Gas Co.

"Utilization of Natural Gas in Repressuring Operations," L. A. Farmer, general superintendent of distribution, Oklahoma Natural Gas Co., Tulsa, Okla.

7 p.m.—Cabaret banquet and dance in the Baker Hotel.

May 7

9:30 a.m.—J. V. Strange, chairman.

"Advertising Natural Gas Sales," Morris Jacobs, Bozell & Jacobs, Inc., Omaha, Neb.

"The National Advertising Program," Herman Russell, president, Rochester Gas & Electric Corp., Rochester, N. Y.

"Dealer Coordination," H. F. Smiddy, Ebasco Services, Inc., New York, N. Y.

"Reforming Natural Gas for Producer Gas Equipment," George M. Parker, industrial fuel engineer, Mississippi River Fuel Corp., St. Louis, Mo.

2 p.m.—Natural Gas Transmission—C. H. M. Burnham, chairman.

"Practical Means of Maintaining Transmission Pipe Line Efficiencies," B. M. Laulhere, engineering supervisor, Southern California Gas Co., Los Angeles, Calif.

"Dust Proofing Compressor Stations," L. W. Jackson, Texoma Natural Gas Co., Texas.

"Natural Gas Hydrate Experience," E. G. Hamerschmidt, Texoma Natural Gas Co.

"Brake Horsepower Analysis of Compressor Station Costs and Performance," D. R. Croft, Ohio Fuel Gas Co., Columbus, and J. W. Partridge, United Fuel Gas Co.

2 p.m.—Industrial Gas Conference—C. H. Waring, chairman.

"Industrial Rates," speaker to be selected.

"Selling Industrial Gas," George Bowersox, Natural Gas Equipment, Inc.

"Gas Engine Power for Cooling," L. W. Melcher, Waukesha Engine Co.

8 p.m.—A natural gas motion picture in the Palm Garden of the Adolphus Hotel.

May 8

9:30 a.m.—William Moeller, Jr., chairman.

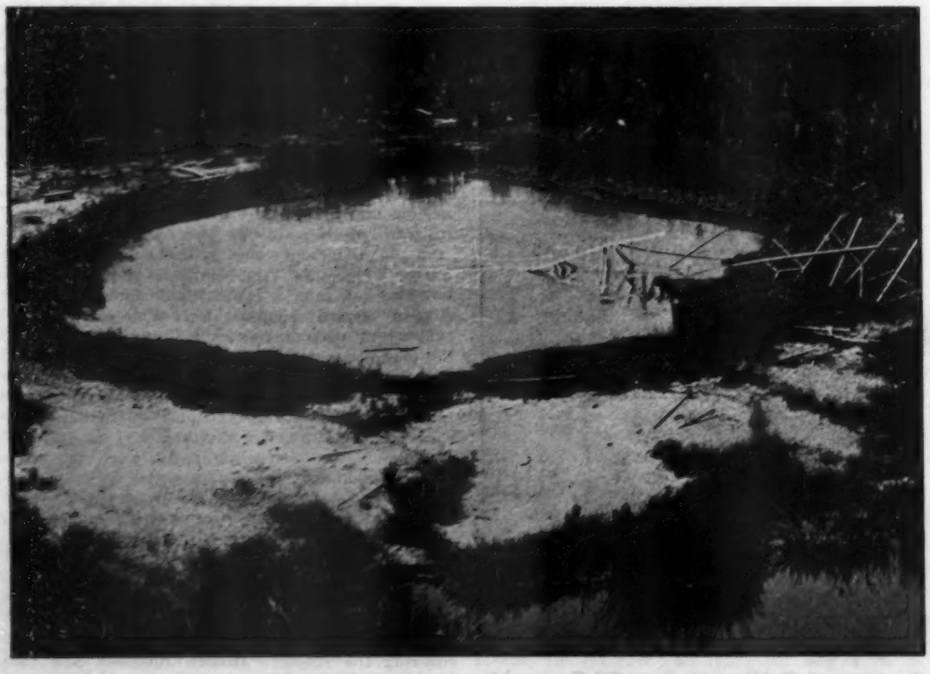
Report of supply men's fund committee—George E. Welker, chairman, United Natural Gas Co., Oil City, Pa.

"Gas Dispatching and Operation of Transmission Pipe Line Systems," S. H. Chadwell, Columbus, Ohio.

"Geophysics in Oklahoma," J. R. Hatfield, Indian Territory Illuminating Oil Co., Bartlesville, Okla.

"Sales Possibilities in Air Conditioning," E. A. Jones, L. J. Mueller Furnace Co., Milwaukee, Wis.

"Painting and Public Relations," G. T. Koch, superintendent of compressors, Ohio Fuel Gas Co., Columbus, Ohio.



Remains of a gas blow in the marshes of southeastern Louisiana. This well on the Venice dome blew out from a sand at 240 feet and cratered

Natural Gasoline

Four Plants for Rodessa

Natural gasoline manufacturers in the Mid-Continent area have given considerable thought lately to the possibility of the Rodessa field of Louisiana supplying a substantial quantity of natural gasoline over the immediate future as well as a large quantity of crude oil.

At the present time four natural gasoline plants are under construction or are rather definitely planned for early construction. By late fall, and assuming crude oil production will continue to increase at the rate the present drilling program is progressing it will be possible to have the Rodessa area supplying as much as 300,000 gallons of natural daily.

Whether this quantity can be readily absorbed by the market remains to be seen. Most students of the market think the quantity too small to be a serious threat, providing no change is made in the status of West Texas conditions, but too large to be ignored.

New Rodessa Gasoline Plant

Glenrose Gasoline Co. has started construction on a 15,000,000-foot gasoline plant in the Rodessa field of Louisiana. Patrick Marr and associates comprise the Glenrose company. The plant will process gas produced from wells owned by them, the sale of the finished natural gasoline to be handled by Hanlon-Buchanan, Inc. The new plan is expected to be completed by July 1. It will operate as a combination vapor absorption and crude oil stabilizer. Under normal operating conditions the plant is expected to produce 15,000 gallons of natural gasoline daily.

Eunice Gasoline Plant

FORT WORTH, Tex., Apr. 20.—The Phillips Petroleum Co. is building a one-unit absorption gasoline plant in the Eunice field of southeastern New Mexico. More than half of the wells in the Monument field will be connected into the Phillips gathering system and processing of the gas through the new plant is expected shortly after the first of May.

Another Rodessa Plant

SHREVEPORT, La., Apr. 20.—The third new natural gasoline plant to be announced this week for construction in the Rodessa field will include eight Cooper-Bessemer 1,000-horsepower units of the twin gas engine tandem-driven type. Other equipment is being ordered while organization details of the company are being worked out. The new plant is expected to be completed in about 90 days, initial gasoline production expected to be 50,000 gallons daily, depending upon the extension of the present gas gathering lines and the drilling of new wells. The plant will be located on properties controlled by United Gas Public Service Co.

Refinery Projects

Socony Adding Solvent Plant

OIL CITY, Pa., Apr. 20.—Socony-Vacuum Oil Co., Inc., has started clearing the site for the addition of new refining equipment at its Olean, N. Y., refinery. Total expenditures for the new construction work and equipment is expected to approximate $1,500,000. Included in the construction program is the erection of a solvent extraction and dewaxing plant, new electrical power equipment and additions to the present refinery. The work is expected to be completed in eight months with about 200 additional men being employed for the construction.

Shell to Expand Houston Plant

HOUSTON, Tex., Apr. 20.—The Shell Petroleum Corp. has formulated plans to build a 20,000-bbl. per day combination topping, cracking and reforming unit and a vacuum rerun unit at its refinery south of this city. When the new unit is completed the refinery will be able to process 76,000 bbls. of crude daily, making it rank among the four largest refineries in the area. Recently the company completed a 10,000-bbl. reforming unit and a few months ago completed a large crude distillation unit. The plant is relatively new, practically all of the equipment being less than six years old, thus emphasizing the rapidity with which Shell has expanded the Houston plant.

In addition to the new combination unit the office building will be enlarged and various repair jobs undertaken. Through the announcement of this work on the part of Shell the tendency of Gulf Coast refiners to expand their plants generally is called to mind. The program under way includes the building of a 36,000-bbl. combination unit and a polymerization unit at the Texas City refinery of the Pan American Refining Corp., a complete 20,000-bbl. refinery at Atreco by the Atlantic Refining Co., a 32,000-bbl. combination unit just completed for the Magnolia Petroleum Co. at Beaumont, a 6,000-bbl. topping unit for the Republic Oil & Refining Co. at Texas City and conversion of the Gulf cracking equipment at its Port Arthur refinery into combination units.

The cost of the above work is probably well in excess of $10,000,000.

Owen Sound Refinery

OWEN SOUND, Ontario, Apr. 18.—Construction will commence early this summer on a refining plant for Nead Oil Refineries, Ltd., of Toronto, for which a site with docking facilities for tankers has been secured on Owen Sound Bay. Arrangements have been made with Canadian National Railways for a siding. The plant will consist of a 750-bbl. Dubbs cracking unit, with coking vessels, sufficient storage to take care of winter operation, and all necessary auxiliary equipment. It will be completed before the close of navigation.

Michigan Construction

MUSKEGON, Mich., Apr. 20.—Muskegon Boiler Works last week delivered a 102-foot bubble tower, the largest in Michigan, to the Naph-Sol Refining Co., North Muskegon, where a $50,000 expansion program is in progress.

Construction of several stacks and vessels for the $200,000 vapor phase cracking unit now being installed by the Old Dutch Refining Co. also has been started at the boiler works plant under one of several contracts let recently through the T.V.P. corporation, designers and builders of the Old Dutch unit.

The Naph-Sol Co. will increase the daily crude capacity of its plant from 3,000 to about 4,500 bbls. by new equipment now being installed. Old Dutch will make a similar increase in capacity to 4,500 bbls. daily in addition to a 1,500-bbl. cracking unit for production of high quality gasoline. Naph-Sol last year installed a $250,000 Dubbs cracking unit with a capacity of about 1,600 bbls. a day from which high grade antiknock gasoline is now being marketed by the Nu-Way Service Stations, Inc., headed by Frank H. Emig, former manager of the Cardinal-Dixie Oil Co.

NEW RODESSA REFINERY

Recently completed plant built in the Rodessa field by Eastern Texas Petroleum Co.

Leonard to Erect Cracking Unit

MUSKEGON, Mich., Apr. 20.—The Ralph M. Parsons Co., of Chicago, has been awarded the contract for general construction of a new 1,500-bbl. cracking plant to be erected at Alma by the Leonard Refineries, Inc., new $600,000 Michigan corporation. Skimming capacity of the plant will be increased to 3,500 bbls. by construction already nearing completion.

E. G. Guy, Michigan refinery engineer, also has announced a new 2,500-bbl. skimming plant to be erected in Alma for Northern Refineries, Inc.

Officers of the company include Don McCuiag, vice president of the Alma Sugar Beet Co, and manager of Symons Brothers & Co.; F. C. Mapes, vice president of the Alma State Savings Bank; Fred Thoms, mechanical engineer, and J. H. Fitchett. Mr. Guy will be a director and will be in charge of construction.

The company has signed a contract assuring a minimum of 1,500 bbls. of crude daily, it was announced. The plant will be erected on a 10-acre site on the Pere Marquette Railroad.

Producer Contracts Awarded

MUSKEGON, Mich., Apr. 20.—Major contracts for the new 1,500-bbl. skimming plant already started at West Branch have been let by the Producers Refining Co. headed by Carl J. Westlund, formerly a Muskegon gasoline distributor. Roy Lather, a former Muskegon contractor, has been named superintendent and is directing installation of concrete foundations and other substructures.

The Muskegon Boiler Works will build the agitator, a job already started in the Muskegon plant. The Edwards company was awarded contract for a fractionating tower 77 feet high and 4 feet in diameter with four stripper platforms. Roy Miller, Chicago architect, is the designer.

Pipe Line Work

Grand Rapids Gas Line

MUSKEGON, Mich., Apr. 20.—Consumers Power Co., which soon will start natural gas service in Lansing and 26 other central Michigan cities, will operate the common gathering line in the Tri-Townships field of Mecosta and Montcalm Counties supplying the new 10-inch trunk line to be laid by the Grand Rapids Gas Light Co. to Grand Rapids as well as the Lansing line.

Gas will be taken pro-rata from all leases and distributed through the common gathering system built by Petroleum Transportation Co. but recently purchased by Consumers company. Requirements for Saginaw and Bay City, partly being met from Tri-Townships field and part from Broomfield Township, Isabella County field, for Lansing and the surrounding communities and for Grand Rapids and intervening cities will then be met from the central gathering line.

The exact method of proration is only tentatively settled and will be worked out in detail at a conference of operators, pipe line executives and the state commission. The commission has indicated it will not approve a second gathering line system for Grand Rapids service.

Construction of the 46-mile line to Grand Rapids at an estimated cost of $400,000 to $500,000 will be started immediately though only a 50-50 mixture of natural and artificial gas has been approved for the second largest city in Michigan. Efforts will be made by the Grand Rapids concern, the city and American Light & Traction Co. to obtain approval for 100 per cent natural gas.

Right of way for the Grand Rapids line already has been taken. The company will build the line with its own construction department, but ditching and welding may be let on contract. Pipe contracts will be let soon.

Start Mullinville Line

HUGOTON, Kans., Apr. 20.—Northern Natural Gas Co. has started to work on its 106-mile 20-inch line connecting its Hugoton properties with its main line from the Panhandle to Minneapolis at Mullinville, Kans. It is to be a combined welded and Dresser line and Truman & Smith of Eldorado, Kans., have the contract. Two crews were started, one at each end and the contract date of completion is June 1. The pipe is coming from A. O. Smith Co., Milwaukee. Heretofore the Hugoton gas for this company has been handled by Panhandle Eastern but the new Detroit contract of that company takes up the entire load for this company's line. The new line will be connected to the 86 gas wells of the Northern Natural in the Hugoton field and will represent an outlay of $2,000,000. This company is also constructing a 1,800-foot bridge for its main line over White Deer Creek, 27 miles north of Skellytown near the Canadian River.

Oklahoma City Extension

Phillips Petroleum Co. has let contract to Williams Brothers Pipe Line Construction Co. to build about 2 miles of 24-inch line to run from the Katy booster station to the capitol in the Oklahoma City field.

California Gas Line

SAN DIEGO, Calif., Apr. 20.—Consolidated Gas & Electric Co. is to lay a new 15-mile trunk line completely Lindewelded from Carlsbad to Escondido, Calif. It will use 2½- and 3-inch standard pipe to carry natural gas at 400-pound peak pressure. Work will start May 15.

East Texas-Gulf Line Ready

FORT WORTH, Tex., Apr. 20.—American Liberty Oil Co. pipe line from East Texas to the coast should be ready to run oil this week. Only the connecting link between Rusk and Conroe will be new. In the same period of time, major companies took 163 wells from other majors.

New Arkansas Horizon

SHREVEPORT, La., Apr. 20.—A new horizon in South Arkansas on the northeast flank, Smackover field, Ouachita County, was opened Monday with completion of a gas distillate well at Phillips Petroleum Co.'s No. 1 J. D. Reynolds in section 27-15-15, bottomed at 4,891 feet.

Socony-Vacuum and Texas to Acquire Colombia Grants and Build Pipe Line

NEW YORK, Apr. 20.—The Socony-Vacuum Oil Co., Inc., and Texas Corp. are negotiating for acquisition of the South American Gulf Oil Corp., wholly owned subsidiary of the Gulf Oil Corp. of Pennsylvania, according to a joint statement issued by the two companies.

South American Gulf Oil Corp. has approximately a 79 per cent interest in the Colombian Petroleum Co., the company which is now operating the Barco oil concession in Colombia. South American Gulf, it is understood, also has a contract with the Colombian government for the construction of an oil pipe line and the transportation of the crude oil produced on the Barco concession to seaboard. The pipe line is to be constructed when a daily production of 20,000 bbls. has been developed on the Barco.

The Barco concession, it is understood, is developing into one of the most valuable oil concessions in South America. With an acreage of more than 1,500 square miles, Colombian Petroleum Co. has until 1941 to choose a maximum area of approximately 500,000 acres for permanent development, the remainder to revert first tract of approximately 100,000 acres is to be chosen in August, but no acreage has to be turned back until 1941.

Eight productive oil wells have been completed on the Barco in La Petrolea district, embracing several hundred productive acres on three domes and a daily potential output of approximately 10,000 bbls., or half the amount needed before transportation facilities are to be provided. Development in the Oro district, at the opposite end of the concession, is now under way. The first test, No. 2 Oro, is drilling below 6,368 feet after having had a show of oil and gas at 6,318 feet. A test of the showing was said to be inconclusive, due to mechanical difficulties, water having come in. No. 3 Oro, three-quarters of a mile from No. 2, is drilling below 1,238 feet. No. 1 Oro was drilled more than 10 years ago by previous owners of the concession. It was reported to have had showings of oil and gas at a depth of approximately 1,000 feet. The showing of No. 2 Oro probably speeded up negotiations for acquisition of the concession by Socony-Vacuum and Texas Corp.

Showing locations of concessions

The oil produced in La Petrolea district ranges in A.P.I. gravity from 40 to 48 degrees and has a high yield of gasoline, and is regarded as a very valuable grade of crude from a refining viewpoint. It is planned to construct a refinery when a daily production of 20,000 bbls. has been developed on the concession. La Petrolea wells range in depth from approximately 600 to 1,300 feet.

The development of the Barco concession thus far has embodied one of the most expensive and difficult jobs ever undertaken by an American oil company abroad. More than $12,000,000 already has been expended. Most of the money has been spent in the construction of roads and clearing of ground for well locations and camp sites. The concession lies for the most part in rough terrain covered by dense jungle growth. Material has been moved in over the rivers from Lake Maracaibo in Venezuela, approximately 150 miles from the lake.

Special permission was obtained from the Venezuelan government for the moving of material through Venezuela, but under the contract with the Colombian government the oil has to be moved out wholly through Colombian territory. This means the construction of a 250-mile pipe line over a mountain some 4,000 feet in altitude at an estimated cost of at least $6,000,000.

Although no official confirmation is available, it is believed in some quarters that Socony-Vacuum and Texas Corp. will eventually acquire control of the Carib Syndicate, which owns a stock interest of approximately 21 per cent in the Colombian Petroleum Co., owner of the Barco concession. This would give them entire ownership, with the exception of the 15 per cent royalty interest, 41/100 of which is owned by American Maracaibo Corp. The remainder of the royalty interest, it is understood, is owned by the heirs of Gen. Virgilio Barco, original owner of the concession. The Carib Syndicate acquired the concession from this Barco, and later sold a 75 per cent interest to Cities Service Co., which drilled one test well, No. 1 Oro, mentioned above. About 10 years ago Texas Corp. acquired an option for control of the Carib Syndicate but failed to exercise it.

The only other active oil concession in Colombia at the present time is the DeMares concession, owned and operated by Tropical Oil Co., subsidiary of International Petroleum Co., Ltd., of Canada, controlled by Imperial Oil, Ltd., which in turn is a subsidiary of Standard Oil Co. (New Jersey). More than 100,000,000 bbls. of crude have been produced on the DeMares concession, most of which has been transported to the sea coast over the 350-mile pipe line owned by the Andian National Corp.

The DeMares concession is in the Magdalena River Valley of Colombia and separated from the Barco by a mountain range. Socony-Vacuum within the past two years has acquired a concession near the DeMares and also bought control of the Equatorial Oil Co., which holds a small acreage adjoining the concession. Control of Equatorial was acquired from Carib Syndicate recently.

The official announcement issued jointly by Socony-Vacuum Oil Co., Inc., and Texas Corp. respecting negotiations for the Barco follows:

"Socony-Vacuum Oil Co., Inc., and the Texas Corp. are jointly negotiating for the purchase of the stock of the South American Gulf Oil Co., operating in Colombia as a wholly-owned subsidiary of the Gulf Oil Corp. The purchase would include the principal interest in the so-called Barco concession, representing the oil rights in about 500,000 acres in northeastern Colombia. Socony-Vacuum and the Texas Corp. will participate equally in this purchase and will proceed at once with the exploration and development of the territory.

"The Barco concession, long famous in Colombia, was acquired in 1918 by a subsidiary of the Colombian Petroleum Co. of Delaware. Seventy-five per cent of the stock of the latter company was purchased in 1925 by South American Gulf Oil Co. Negotiations with the Colombian government, relating to the validity of the concession, resulted in a new agreement with the government in July, 1931, pursuant to which the Colombian Petroleum Co. was given the concession for the exploration and exploitation of oil in the concession area, and South American Gulf was given the concession to construct a pipe line to seaboard to transport the oil so produced. At the present time South American Gulf owns about 79 per cent and Carib Syndicate, Ltd., about 21 per cent of the outstanding stocks of Colombian Petroleum Co.

"The concession agreement, calling for the payment of a royalty to the Colombian government, is for a term of 50 years from 1931."

Socony-Vacuum Oil Co., Inc., also announces it has purchased from Carib Syndicate, Ltd., the latter's claim of $203,569.50 against Equatorial Oil Co. of Delaware, together with 898,008 shares of Equatorial stock representing 59 per cent of the stock outstanding. The aggregate amount paid by Socony-Vacuum was only a small fraction of the amount of the claim. No value was placed upon the stock interest acquired.

The only asset of Equatorial Oil Co. appearing on its balance sheet consists of a parcel of land in the Magdalena River Basin in Colombia, originally acquired by Equatorial as oil land, but never developed.

Socony-Vacuum has no plan for advancing funds to Equatorial Oil Co. for the development of its property. The acquisition was made because of Socony-Vacuum's interest in adjacent property.

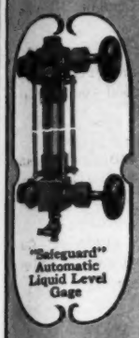
A group of officials of the Socony-Vacuum Oil Co. have left New York for Colombia where they will visit the capital and the Barco concession. The party is headed by John A. Brown, chairman of the executive committee, and includes in addition to Mr. Brown, Arthur F. Corwin, vice president in charge of production, and formerly head of the Carter Oil Co.; H. F. Sheets, vice president in charge of marketing; F. S. Fales, vice president, and G. V. Holton, general counsel.

It is understood the party will travel by plane from Baranquilla to Banca Bermeja, near which properties recently acquired by Socony-Vacuum are situated as well as the DeMares concession of the Tropical Oil Co., thence to Bogota, the capital. From this point they may travel by plane or bus to Cucuta, which is about 20 miles from the Barco concession. They will probably enter the concession at Puerto Villamizar.

Hydraulic Ejector

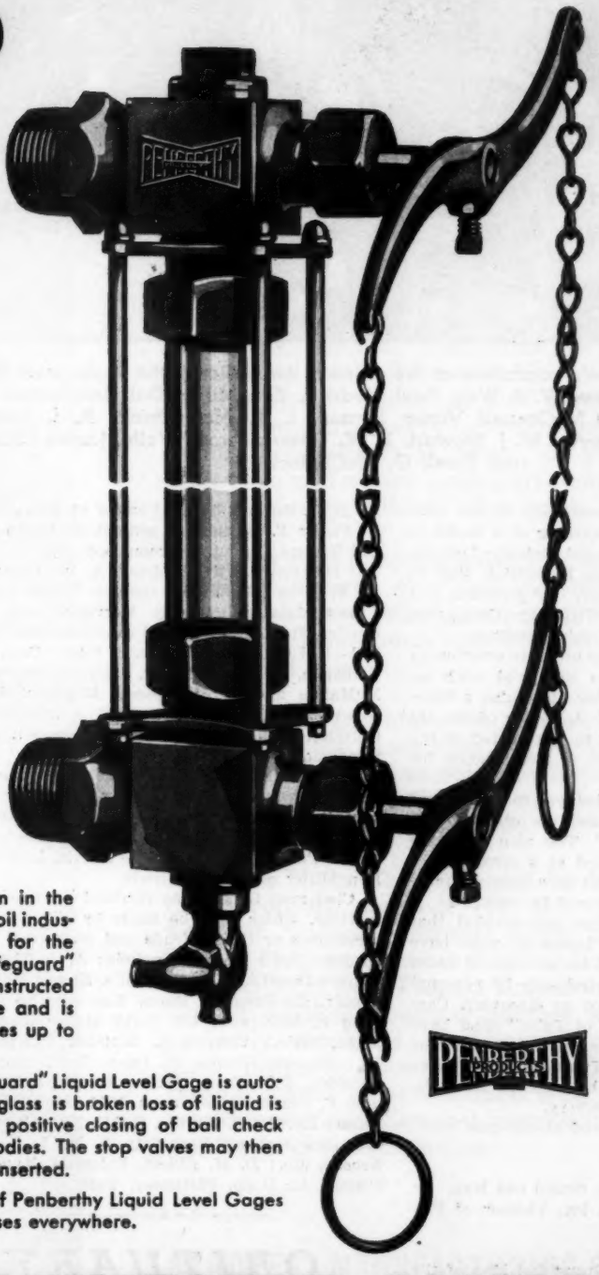
PENBERTHY PRODUCTS

Steam Ejector


"Safeguard" Automatic Liquid Level Gage

Automatic Injector

"SAFEGUARD" LIQUID LEVEL GAGE



"Navy Type" Liquid Level Gage

Gas Engine Lubricator

ALL ★ THAT THE NAME IMPLIES

"All-Iron" Automatic Liquid Level Gage

Snap Lever Oiler

SAFETY is a primary consideration in the selection of equipment for the oil industry—that is an important reason for the popularity of the Penberthy "Safeguard" Liquid Level Gage. It is ruggedly constructed of high grade steam metal bronze and is recommended for working pressures up to 300 pounds.

Operation of the Penberthy "Safeguard" Liquid Level Gage is automatic and dependable. When the glass is broken loss of liquid is prevented by the immediate and positive closing of ball check valves in both upper and lower bodies. The stop valves may then be safely closed and a new glass inserted.

"Safeguard" and the other types of Penberthy Liquid Level Gages are carried in stock by supply houses everywhere.

Automatic Cellar Drainer (Water or Steam Operated)

Automatic Electric Sump Pump

PENBERTHY INJECTOR COMPANY

Manufacturers of Quality Products since 1886

DETROIT, MICHIGAN — WINDSOR, ONTARIO

Spring Compression Grease Cup

Plain Compression Grease Cup

Screw Plunger Grease Cup

Old Timers Are Much Interested in Awards at Petroleum Exposition

Meeting of the Old Timer's committee at the scene of the replica of the Drake well: Seated, left to right: J. Burr Gibbons, W. B. Way, Paul Hedrick, Ken Miller, Dal Dalrymple; standing, left to right: Glenver McConnell, Victor Barnett, J. K. McGoldrick, A. I. Levorsen, George Bell, James McIntyre, W. J. Stewart, B. M. Gessel, Frank Wolfe, James Flanagan, and Frank G. McClintock

Much interest is being manifested in the "Old Timers" meetings and the awarding of a medal to the "Grand Old Man of the Oil Industry" at the ninth International Petroleum Exposition May 16 to 23, according to Hal Gruber, vice president and sales manager of the Union Wire Rope Corp., who is chairman of the historical subcommittee.

Tentative plans include the ultimate erection on the exposition grounds of a memorial with an engraved plaque and a chamber containing a registration book of "old timers." A replica of the old Drake well has been moved to the center of the grounds and will be fitted up as a club house for these men.

Two medals will be awarded, one to the "Grand Old Man of the Industry" and the other to the "Grand Old Man of Tulsa." The men receiving these medals will be presented at a ceremony at the site for the monument and at a special luncheon where stories of the past will be swapped.

The historical subcommittee has decided that the "Grand Old Man of the Industry" must have been engaged in the industry for at least 50 years and have contributed to the industry by personal example, inspiration, invention or discovery. Candidates for "Grand Old Man of Tulsa" must have been actively engaged in the oil industry for at least 30 years, 20 years in Tulsa. He must have contributed to the industry by personal example, inspiration, invention or discovery.

Men who have been honored at the past expositions were:

1927

J. Alex Stephenson, Tulsa, Grand Old Man.

Jacob Sheasley, Franklin, Pa., Pioneer of Pioneers.

1928

James Amm, New York, Grand Old Man of the Industry.

A. J. Sanders, Claremore, Pioneer of Pioneers.

Joseph H. Evans, Tulsa, Grand Old Man of Tulsa.

1929

John C. Looker, Bradford, Pa., Grand Old Man of the Industry.

Martin Moran, Tulsa, Grand Old Man of Tulsa.

1930

E. H. Sloan, Pittsburgh, Pa., Grand Old Man of the Industry.

J. J. Larkin, Tulsa, Grand Old Man of Tulsa.

1934

N. V. V. Franchot, Olean, N. Y., Grand Old Man of the Industry.

J. S. Follett, Tulsa, Grand Old Man of Tulsa.

A. W. Gordon, Tulsa, Pioneer or Pioneers.

Victor F. Barnett is general chairman of the Old Timers Committee, composed of L. E. Smith, Dal Dalrymple, Paul Hedrick, A. W. Leonard, N. V. V. Franchot, H. R. Gruber, Floyd Swindell, James McIntyre, Barney Horrigan and W. G. Skelly. Subcommittees and chairman are: Historical—Hal Gruber, chairman, J. Edgar Pew, James Flanagan, John McGoldrick, James McIntyre, C. L. McMahon and B. M. Gessel. Memorial Plans—Glenver McConnell, chairman, E. A. Braniff, J. H. Gardner, Luther White and A. I. Levorsen. Entertainment—George Bell, chairman, John Mabee, F. G. McClintock, Frank Wolfe, Fred Cook and W. J. Stewart. Registration—Al Cashman, chairman, Guy Thompson and L. C. Collins. Publicity—Dal Dalrymple, chairman, Floyd Swindell, Larry Smith, Paul Hedrick, Clarence Morris, L. M. Ladet, Ken Miller and Irwin Lewis.

Chairman Gruber has received numerous nominations, which may be made by the old timers themselves or their friends and forwarded to Mr. Gruber. Some of them include: A. J. Thompson, Empire Pipe Line Co., Teterville, Kans.; Martin H. Mosier, 55 Fremont Place, Los Angeles, Calif.; John L. McKowan, 420 North Hodge Street, Sapulpa, Okla.; Charles E. Birtciel, Pleasantville, Pa.; Hymon Krupp, El Paso, Tex.; George C. Patridge, 2261 East Reading Street, Tulsa; William F. Braun; G. L. Brown, 1011 South Rockford, Tulsa; Herbert P. Morian, R.F.D. No. 3, Titusville, Pa.; Jim Berhany, Rock City, N. Y.; L. L. Dimit, Neosho, Mo.; D. M. Elliott, Eldorado, Kans., and Murray M. Doan, Philtower, Tulsa.

OBITUARY

ADDISON H. GIBSON, 75, president, Galvez Oil Corp. and Gibson-Zahniser Oil Corp., died in a Tulsa hospital Saturday night of pneumonia.

FREDERICK C. BROWN, 64, for 26 years engineer of the wax works of the Canadian Oil Companies, Ltd., refinery at Petrolia, Ontario, died recently.

J. ALEX STEPHENSON, 90, drilling contractor, first "Grand Old Man" of the International Petroleum Exposition, died at this home in Depew, Okla., of complications of extreme age. He was credited with having drilled the third commercial oil well in the United States two years after the original Drake well. He drilled throughout eastern fields, and in Oklahoma, Texas, Kansas, Illinois and California.

DAVID AIKEN, widely known as a rig builder in the Petrolia and Borneo fields, died recently at Petrolia, Ontario.

JOHN E. MIDDLETON, foreman of the can department of Imperial Oil, Ltd., at Sarnia, Ontario, died recently, aged 53.

W. C. KOBEL, 53, erecting engineer for Cooper-Bessemer Corp., died at his home in Tulsa Sunday after a long illness with cancer.

JOHN STROUP, 69, for many years foreman for the Southern Ontario Gas Co. in the Tilbury field, Kent County, Ontario, died recently.

A. W. NEAL, 61, Bartlesville, Okla., oil man, died suddenly from a heart attack at Guthrie, Okla.

GEORGE W. MYERS, head of the Myers & Wright, firm of oil operators and identified with Alberta oil development since 1914, died at Calgary recently, aged 54.

A. E. MITTNACHT, secretary-treasurer of the Ethyl Gasoline Corp., New York, died last week. He had been ill some time and had apparently recovered when stricken.

WILLIAM W. BOULTBEE, secretary-treasurer of Home Oil Dstributors, Ltd., of Vancouver, British Columbia, died recently, aged 57.

HERBERT O. CASTER, associate head of oil and natural gas activities of Cities Service Co., died in New York April 14. He was born August 28, 1871, in Ohio. At an early age his parents moved to Kansas, where he attained prominence as an educator.

On May 1, 1919, he became associated with Henry L. Doherty as general counsel for Empire Gas & Fuel Co. of Bartlesville, Okla., which position he held until September 20, 1925, when he entered the New York office as a member of the executive committee.

Mr. Caster was an officer and director of 46 corporations, including Arkansas Natural Gas

Corp., Cities Service Co., Crew Levick Co., Dominion Natural Gas Co., Ltd., Empire Gas & Fuel Co., Kansas City Co., Louisiana Oil & Refining Corp. and Natural Gas Pipe Line Co. of America. In 1933 he served as president of the American Gas Association.

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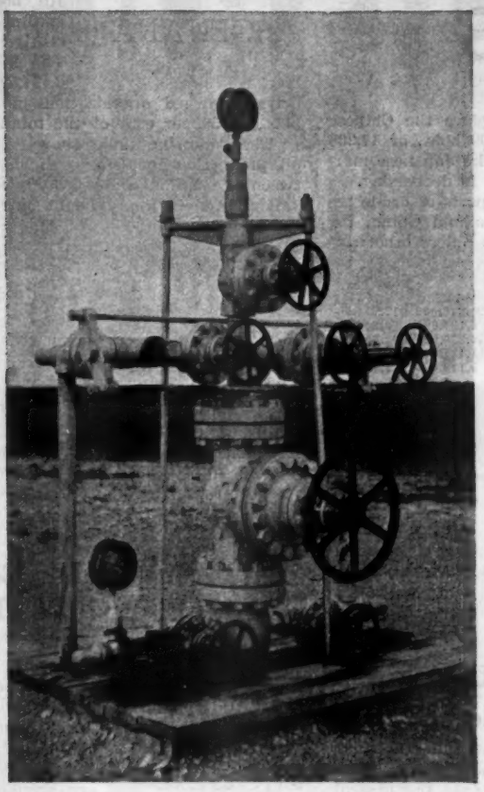

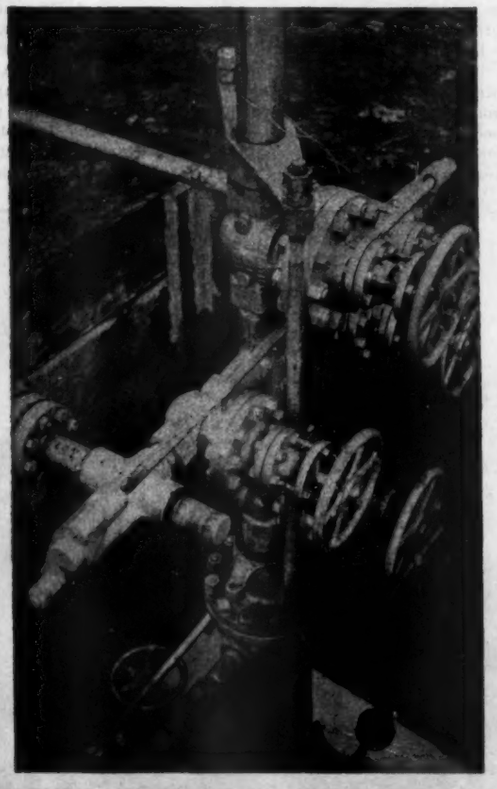

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Oil News from Foreign Lands

Oil Production in Venezuela, Colombia, Ecuador

The production of crude oil in Ecuador during March, 1936, amounted to 140,952 bbls., a daily average of 4,547 bbls., compared with 118,398 bbls., or 4,082 bbls., in February. The production for the first quarter of 1936 amounted to 387,261 bbls., or a daily average of 4,255 bbls. Anglo-Ecuadorian Oil Co., Ltd., a British company, is the prinicipal producer of crude oil in Ecuador. A large concession in the interior, reported to be under control of the Leonard Oil Company, an American organization, has not yet been developed.

PRODUCTION

Crude oil production in Venezuela by the Royal Dutch-Shell subsidiaries for the four weeks ended April 11 amounted to 4,403,700 bbls., a daily average of 157,278 bbls. This compares with a total of 4,368,500 bbls. produced in the previous four weeks' period, a daily average of 156,017 bbls.

Production for the four weeks ended April 11 by companies was as follows (in barrels):

Venezuelan Oil Concessions, Ltd.:	
La Rosa	626,600
Lagunillas	2,219,200
Concepcion	96,400
La Paz	26,300
Caribbean Petroleum Co., Ltd.:	
Mene Grande	1,043,200
Colon Development Co., Ltd.:	
Tarra-Los Manueles	*393,000

*Colon figures are for the four weeks ended April 10.

The production of crude oil in Colombia in March totaled 1,619,620 bbls., a daily average of 52,246 bbls., compared with 1,475,403 bbls., or 50,875 bbls., in February. Production for the first quarter of 1936 amounted to 4,706,641 bbls., a daily average of 51,721 bbls., against 4,242,164 bbls., or 47,135 bbls. daily, in the corresponding quarter of 1935.

Japanese Oil Market Grows While China Decreases

The increasing importance of Japan as an oil consuming nation is indicated by figures covering imports for 1935 and 1934, released by the U. S. Bureau of Mines, Department of Interior. The imports for 1935 totaled 30,002,000 bbls., a daily average of 82,197 bbls., compared with 25,958,000 bbls., or 71,000 bbls. daily, for 1934. This is an increase of 4,044,000 bbls., or 15 per cent. The figures given include only liquid products, comprising the bulk of the imports, however. The import statistics for Japan give crude and fuel oil combined, but not separately. Total refining capacity in Japan is approximately 25,000 bbls. daily, while the imports for 1935 of crude and fuel oil combined were 50,931 bbls. daily, indicating that the fuel oil importations alone approximated 35,000 bbls. daily. Increased imports of paraffin wax, petrolatum, grease and asphalt were reported for 1935 as compared with 1934.

JAPAN
CHINA

The United States was the greatest supplier of oil to Japan during both 1935 and 1934, contributing approximately 75 per cent in 1935, against 65 per cent in 1934. Japan obtained most of its crude oil and fuel oil in the United States, while the largest percentage of the imports of gasoline and kerosene is from the Dutch East Indies.

Japan, of course, far exceeds China in importance as a market for petroleum products, as shown by the import statistics which place the Chinese imports for 1935 at only 6,312,000 bbls., or 17,293 bbls. daily. Furthermore, while the Japanese market is increasing, that of China is decreasing.

The following table shows imports of crude petroleum and products into Japan and China, for 1935 and 1934, figures in barrels unless otherwise noted:

JAPAN

	1935	1934
Crude oil and fuel oil	21,875,000	17,714,000
Gasoline, kerosene and lubricants	3,127,000	3,244,000
Paraffin wax (pounds)	40,230,000	32,801,000
Petrolatum (pounds)	1,437,000	876,000
Grease (pounds)	5,710,000	1,804,000
Asphalt and pitch (metric tons)	6,247	4,032

CHINA

	1935	1934
Gasoline	976,000	946,000
Kerosene	3,442,000	2,855,000
Fuel oil	2,646,000	2,727,000
Lubricating oil	249,000	270,000
Grease (pounds)	3,181,000	2,899,000
Paraffin wax (pounds)	67,629,000	58,107,000
Asphalt (metric tons)	12,787	13,382

Approximately half of the imports of kerosene into China are from the United States, but the Dutch East Indies leads in supplying the other petroleum products which China uses.

Revised Petroleum Legislation Expected in Colombia

At the forthcoming session of the Colombian Congress, which convenes in June, a new petroleum law will be enacted to replace the present law passed in 1931, according to present plans of the government. While the new law is designed to encourage development of the country's oil resources on a broader scale, it is understood that in its present form it does not meet full approval of the industry, and may be revised before passage.

COLOMBIA

Argentine Crude Production National and Private

The nationally-owned oil organization, Yacimientos Petroliferos Fiscales, accounted for approximately 41 per cent of Argentina's total crude oil production of 14,729,101 bbls. in 1935, according to figures recently made available. The Y.P.F. output was 6,134,536 bbls., while privately-owned organizations produced 8,594,565 bbls., or 59 per cent of the total.

ARGENTINA

The following table shows Argentina's crude oil production in 1935 by fields, divided as between the Y.P.F. and privately-owned companies (all figures in approximate barrels):

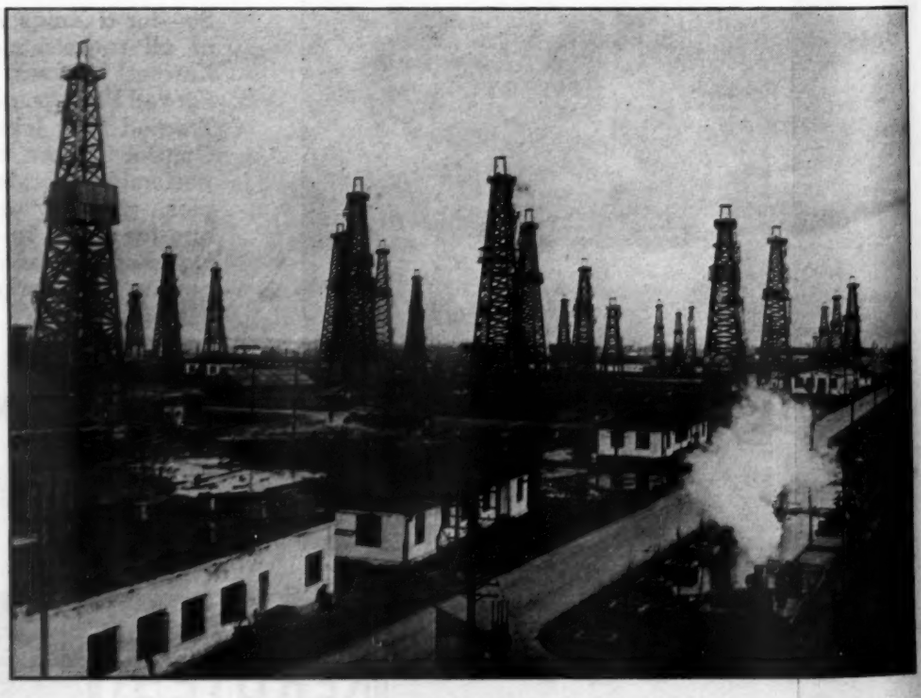
	Y.P.F.	Private companies	Total
Comodoro Rivadavia	5,570,656	6,176,540	11,747,196
Plaza Huincal	399,847	549,913	949,760
Salta	123,851	1,850,283	1,974,134
Jujuy	2,502	.....	2,502
Mendoza	37,680	17,829	55,509
Total	6,134,536	8,594,565	14,729,101

The Comodoro Rivadavia oil field continues as the leading producing area with nearly 80 per cent of the country's total output. In this field the government-owned organization produces approximately 47 per cent of the production, while private companies account for the remaining 53 per cent.

Test in England Is Capable of Drilling 10,000 Feet

The first test to be drilled in England by the D'Arcy Exploration Co., Ltd., subsidiary of the Anglo-Iranian Oil Co., under the extensive exploratory program mapped out several months ago, spudded in late in March, No. 1 Portsdown, near the town of Cosham in southern England, within sight of Portsmouth harbor, is equipped with combination tools capable of drilling to a depth of 10,000 feet and a 136-foot derrick. The D'Arcy Exploration Co. has government licenses to explore and develop 111,000 acres in the Portsdown area and a total of 4,445,440 acres in the British Isles. Anglo-Iranian Oil Co., which controls D'Arcy Exploration, is affiliated with the British Government.

ENGLAND



Kaganovich, new oil field at Baku, U.S.S.R.
(Sovfoto)

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Future of Stations

The pressure of adverse legislation is raising the question whether oil companies can afford to continue in the service station business. While financial reports show that the industry was able to earn some profit last year many companies showed a loss on their marketing operations. With increasing tax handicaps bearing most heavily on marketing companies profitable operation will become enormously difficult, if not impracticable.

Chain store legislation in Iowa forced major companies to lease stations to independent dealers who operate them. Results appear more satisfactory to oil companies than to consumers who complain of a let-down in the standards of service.

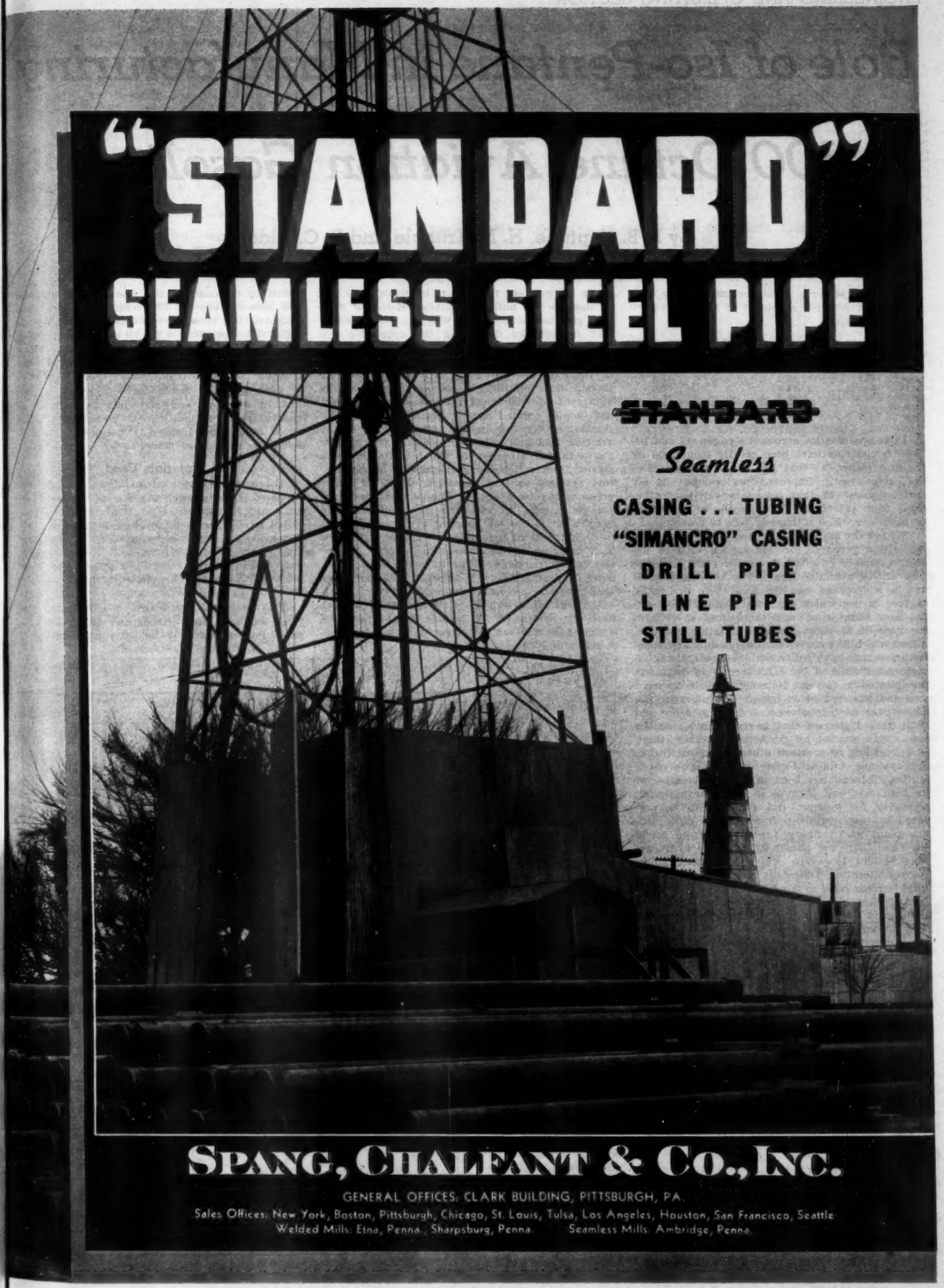
When the companies controlled and operated the stations they could compel maintenance of service standards. It is true they paid a high price for this superservice with elaborate facilities at practically every street corner and highway crossroad, services which the consumer had no more right to expect at a filling station than could be looked for in any other place of retail merchandising.

It grew through uneconomic competition which also multiplied outlets far beyond demand and accustomed patrons to free attentions not duplicated in any other business. It would be a curious consequence of public delusion in support of ill-advised legislation if the outcome deprived the motoring public of the free privileges it has enjoyed for so many years.

Consider the facts. Chain store legislation in the states and the possibility of a national law; the decision that lease and agency stations are to be considered for taxation purposes as units controlled by the company and subject to the act; the implication that companies are accountable under the social security act for tens of thousands of employes not employed by them but for whose contributions they will be held responsible; the continued pressure for minimum wage and hours regulation; all of these will bear heavily upon oil companies forced to compete with individual dealers who will escape these burdens and may operate stations 14 hours a day with the aid of wife and children without the least restriction.

All the prohibitions and tax burdens bear against the companies but not upon their competitors. No wonder it is being asked whether it is worth while for companies to attempt to continue with all the cards stacked against them. In addition there is the perpetual effort of competitors to discredit company operations in public opinion through political agitation.

Perhaps the public would be enlightened if it had a taste of the results. With the standards established by the companies removed, with service stations reduced to mere filling stations, the oil companies might be better off in several respects.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Role of Iso-Pentane in Manufacturing 100 Octane Aviation Gasoline

By F. B. Neptune, H. M. Trimble and R. C. Alden
Research Department Phillips Petroleum Co.

A general swing to higher octane aviation fuels has been evident for a number of years as shown by the following:

Year	Aver. octane rating (weighted on gallonage) Requested by U. S. Army air corps	Three leading air lines
1930	70.6	73.0
1931	77.7	73.0
1932	82.2	73.0
1933	87.3	78.9
1934	90.2	80.4

In recent months, aeronautic engineers and petroleum chemists have been greatly stimulated by the discoveries (1) that 100 octane number gasoline gives vastly improved performance in air craft engines (2) that iso-octane can be synthesized from petroleum hydrocarbons in quantities by processes which ultimately will be economic.

Neither the aeronautic nor the petroleum industry is now prepared for this sudden shift to 100 octane number gasoline. Indications are that the fuel will be available long before suitable engines are in widespread use although there are many engines in use which can obtain considerable advantage. Some time ago there was a definite shortage of 87 octane number aviation gasoline, a fact which has discouraged aeronautic engineers from progress in this direction. However, the stimulating influence of the U. S. Army air corps has precipitated a feverish interest in this forward step and has created an impatience to realize the advantages now apparent.

In the excitement that has prevailed over the new vistas created by synthetic iso-octane, there is a tendency to overlook other fuel possibilities. For example, toluene blends offer definite possibilities. Toluene has been discounted because of its high cost and because it is a war material, necessary for defense. But toluene can be prepared in vast quantities from natural gas, gasoline plant and refinery vapors and from crude oil. Then there are numerous synthetic hydrocarbons besides iso-octane which will merit study and consideration. Di-isobutylene, cyclohexane and ethyl benzene come to mind at once.

And there is one hydrocarbon, which occurs abundantly and naturally in petroleum which has been almost completely overlooked. Iso-pentane is a major constituent of natural gasoline. It is estimated that 190,000,000 gallons of iso-pentane could be produced annually, by simple fractionation, from the natural gasoline produced in the United States.

The writers' company has made extensive studies of this interesting hydrocarbon, particularly in relation to its antiknock characteristics and in regard to its potentialities when blended in aviation fuels. Millions of gallons of "iso-pentanized" aviation natural gasoline have been made and marketed. Several novel features of the development have been claimed in pending patent applications.

The following characteristics of iso-pentane (2-methyl butane) are of interest in this connection:

Octane number	90
Reid vapor pressure	20.4 lbs.
Boiling point	82.3° F.
Gravity	94.9° A.P.I.

Although no direct tests have been made, indications are that iso-pentane with less than 1.0 cc tetraethyl lead (TEL) per gallon will have 100 octane number.

In the past our response to inquiries as to how to improve the antiknock characteristics of aviation gasoline have been: "Why not iso-pentane?" The reasons for discarding the suggestion are obvious. First, although the supply now appears abundant, it cannot be considered so in the light of the expected growth of aviation. Second, although the volatility is not extreme from the viewpoint of fundamental engineering, its direct use would require drastic revisions of conventional fuel systems. In the current review of the aviation fuel and engine problem it will not be amiss to call attention to the benefits that can accrue from rationalizing the design of airplane fuel systems so that gasolines of higher vapor pressure can be tolerated. Engine designers have not yet caught up with the fact that economic conditions in the oil refining art have changed to such an extent that it is now cheapest to make high vapor pressure gasolines. In the case of aviation gasolines, high vapor pressure will mean more iso-pentane. Since this paper will show that iso-pentane is almost equivalent to iso-octane in antiknock characteristics it seems quite logical that the design of 100 octane number engines should take this vapor pressure factor into account.

In passing, it is decidedly worth noting that butane occurs much more abundantly in petroleum than does iso-pentane and is cheaply and easily extracted. In natural gas and in natural gasoline there are great quantities of normal and iso-butane. These two naturally occurring and abundant hydrocarbons have the following characteristics:

	Iso-butane	Normal butane
Oc. No.	99	91
Reid v.p., lb.	74	52.5
B.p. °F.	10	31
A.P.I. gr.	119.3	110.7

From the viewpoint of basic engineering and of fundamental economics it may seem questionable to go to the expense of synthesizing iso-octane from iso-butane. There is little change in antiknock characteristics. The only change is in boiling point. These comments serve to emphasize the remarks made in the preceding paragraph. For the sake of cheaper fuels, aeronautic engineers should give serious attention to the vapor pressure and volatility limitations they impose on aviation gasolines.

The experiments described in the following paragraphs were undertaken to demonstrate the role of iso-pentane in the manufacture of 100 octane gasoline. Chief emphasis has been placed on gasolines of 7-pound Reid vapor pressure with 3.0 cc TEL per gallon. However, the tests were planned so that higher and lower values for octane number, Reid vapor pressure and TEL requirements could be studied.

Obviously, it would have required a vast amount of work and materials to consider all the variables of quality to be encountered in the three components blended. Consequently, the following choices were made.

Materials Used

Composite commercial aviation gasoline was prepared from airport samples of fuels of several major suppliers. The final composite consisted of 50 per cent gasoline sampled in California, 50 per cent gasoline sampled on the Texas Gulf Coast. All of the fuels used in the composite were 73-74 octane, unleaded, 5-7 pound Reid vapor pressure. Characteristics of the composite base are shown in Tables 1 and 2.

The iso-octane used was a chemically pure grade obtained from Rhom and Haas, Philadelphia, Pennsylvania. It has the certification of the U. S. Bureau of Standards.

The iso-pentane used was fractionated from

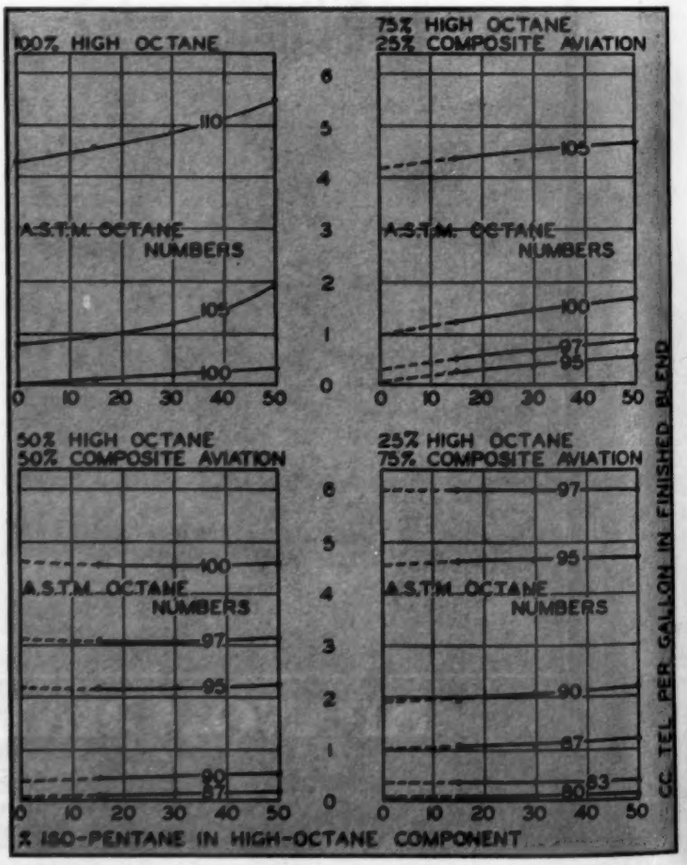

Fig. 1—Blending to constant octane number of various blends

natural gasoline. The batch used in these experiments tested 99 per cent iso-pentane.

Blending

The compositions of the blends used in the experiment are shown in Table 1. The compositions are on a volume percentage basis. All blending operations were conducted at a temperature of 40° F. or less and the measuring was done on an accurate torsion balance to minimize errors.

TESTING METHODS USED

Reid vapor pressures—A.S.T.M. D 417-35T.
Engler distillations—A.S.T.M. D 86-30.
Antiknock tests—A.S.T.M. D 357-34T.
Sulfur test—Ethyl Gasoline Corp. lamp.

Compositions and principal inspection characteristics of the blends and composite base are shown in Tables 1 and 2. The data of these tables can be cross-plotted to determine the effects of several variables.

When iso-octane is added to conventional aviation gasoline, the aviation gasoline loses front end volatility and hence the blend is inferior in starting characteristics. Because of its low boiling point, iso-pentane serves admirably for restoring the lost volatility. The data in Table 1 can be plotted to show the volatility relationships. The graphical relationships pertaining to volatility characteristics are omitted from this presentation in the interest of brevity and simplicity.

In Figure 1, curves of constant octane numbers are shown for the several combinations of high octane material and composite aviation base. It is interesting to note that as the percentage of relatively low octane number aviation base in the finished blend is increased beyond 25, iso-pentane can be substituted for iso-octane with little or no additional tetraethyl lead (TEL) required. In the upper left hand chart of Figure 1, it is indicated that a blend of 50 per cent iso-pentane, 50 per cent iso-octane requires only 0.35 cc. TEL to 100 octane number. The possibility that iso-pentane could be leaded to 100 octane number with less than 1.0 cc. is suggested by an extrapolation of the 100 octane curve.

TABLE 1—VAPOR PRESSURE, DISTILLATION AND SULFUR DATA OF THE COMPOSITE BASE

Sample identification	Composition (percentage by volume) High octane Component				Composite aviation	First drop	Temp. @ % evap. 10	50	90	End-point	% rec.	% loss	API grav.	% evap. @ 212°F.	10-50 sum	% sulfur	R.V.P.
		A	B	C													
% Iso-pentane		15	30	50													
% Iso-octane		85	70	50													
SS 20842 A7		0	0	0	100	117	159	199	245	310	99.0	0.7	62.3	66	358	0.016	5.95
A8		25	...	...	75	114	160	200	234	296	99.0	0.8	65.2	70	360	...	5.60
A9		...	25	...	75	111	150	197	233	307	99.0	0.9	65.9	71	347	...	6.30
A10		...	...	25	75	110	138	192	236	303	98.8	1.0	66.8	71	330	...	7.45
A11		50	...	...	50	113	160	201	225	288	99.0	0.7	63.4	73	361	...	5.50
A12		...	50	...	50	102	143	197	225	300	99.0	0.8	69.5	76	340	...	7.10
A13		...	...	50	50	94	110	181	223	284	99.0	0.7	71.5	80	390	...	9.00
A14		75	...	...	25	110	163	202	215	284	99.0	0.9	71.4	83	365	...	5.35
A15		...	75	...	25	99	135	197	216	294	99.0	0.8	73.7	81	332	...	7.80
A16		...	...	75	25	91	113	168	215	291	98.5	1.3	76.7	85	281	...	10.65
SS 20205		100	...	...	0	108	164	207	209	244	99.0	0.4	74.7	98	371	...	5.20
SS 20206		...	100	...	0	93	129	199	209	240	98.2	1.3	78.0	98	328	...	8.25
SS 20842-A17		...	...	100	0	95	104	150	208	242	98.5	1.4	82.6	97	254	...	12.15

TABLE 2—ANTIKNOCK DATA OF BLENDS AND COMPOSITE BASE

Sample identification	Composition (percentages by volume) High octane component				Unleaded	cc. TEL required to indicated octane numbers								
	A	B	C	Composite aviation	octane number	80	83	85	87	90	95	97	100	105	110
% Iso-pentane	15	30	50												
% Iso-octane	85	70	50												
SS 20842 A7	0	0	0	100	73.7	0.6	1.20	1.80	2.70	4.60	>6.00	>6.00	>6.00	...	...
A8	25	...	...	75	78.7	0.1	0.40	0.70	1.10	1.95	4.65	6.00	>6.00	...	...
A9	...	25	...	75	78.8	0.1	0.40	0.70	1.10	2.10	4.70	6.00	>6.00	...	...
A10	...	...	25	75	78.8	0.1	0.40	0.70	1.20	2.20	4.70	6.00	>6.00	...	...
A11	50	...	...	50	84.1	...	...	...	0.10	0.45	2.15	3.10	4.55	...	...
A12	...	50	...	50	84.0	...	...	...	0.15	0.50	2.20	3.10	4.55	...	...
A13	...	...	50	50	83.6	...	...	...	0.20	0.55	2.25	3.15	4.60	...	...
A14	75	...	...	25	89.5	...	...	...	...	0.05—	0.30	0.55	1.25	4.40	...
A15	...	75	...	25	88.6	...	...	...	...	0.05+	0.45	0.70	1.50	4.55	...
A16	...	...	75	25	87.8	...	...	...	...	0.10+	0.60	0.90	1.70	4.70	...
SS 20205	100	...	...	0	97.8	...	...	...	...	...	...	...	0.10	1.00	4.60
SS 20206	...	100	...	0	96.7	...	...	...	...	...	...	...	0.20	1.20	4.90
SS 20842 A17	...	...	100	0	93.5	...	...	...	...	...	0.05	0.10	0.35	1.95	5.50

TABLE 3—RESULTS OBTAINED BY "ISO-PENTANIZING" AN ISO-OCTANE BLEND

Per cent Iso-pentane	Reid vapor pressure	Per cent aviation gasoline	Per cent Iso-octane	Per cent increase in production relative to supply of Iso-octane
0	4.0	38.0	62.0	0
10	5.8	37.2	52.8	17
17	7.0	36.7	46.3	34
20	7.7	36.4	43.6	42
30	9.5	35.7	34.3	80
40	11.4	34.9	25.1	147
50	13.3	34.1	15.9	290

Figure 2 is similar to Figure 1 except that lines of constant TEL are shown.

The difficulties attendant to rating fuels in the higher octane brackets were reduced to some degree in this work by use of a previously established relationship between A.S.T.M. octane number and compression ratio for same audible knock intensity. At the time the octane number—compression ratio curve was determined, it was found that a blend of 89.5 per cent benzene, 10.5 per cent n-heptane equalled iso-octane in antiknock. From this, benzene would equal 110.5 A.S.T.M. octane number if each percentage of benzene in n-heptane above 89.5 per cent was assumed equivalent to 1 octane unit above 100. Extrapolation of the octane number - compression ratio curve also indicated an octane value of 110-111 for benzol. From these considerations a fuel equal in antiknock to 90.5 per cent benzene in n-heptane was rated 101 octane number, a fuel equal to 91.5 per cent benzene in n-heptane was rated 102 octane number, etc.

From Figures 1 and 2 and the supporting data in the tables, it has been calculated that iso-pentane has a value ranging from 92 to 100 per cent of the value of iso-octane in making 100 octane gasoline with 3 cc. TEL per gallon.

The tabulation in Table 3 shows the results to be obtained by "iso-pentanizing" an iso-octane blend of this particular aviation gasoline to make 100 octane number gasoline with 3 cc. TEL per gallon.

From the data presented herewith practically any set of specifications for finished aviation gasolines could be appraised in a similar manner.

Iso-pentane can be added in considerable proportions in the manufacture of high octane number aviation gasolines. It has the effect of greatly augmenting the supply of such gasolines relative to the supply of iso-octane. Iso-pentane imparts desirable volatility to the iso-octane blends. From the antiknock viewpoint, iso-pentane has a value ranging from 92 to 100 per cent of that of iso-octane in making 100 octane number aviation gasoline.

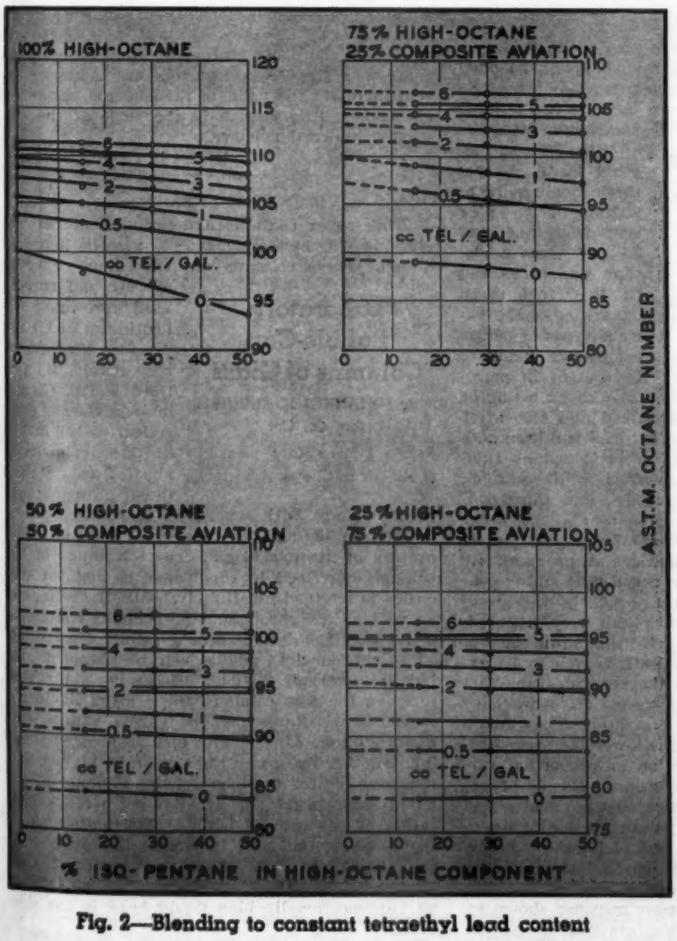

Fig. 2—Blending to constant tetraethyl lead content

Illinois Mineral Conference

The fourth annual Mineral Industries Conference of Illinois will be held at Urbana, April 24 and 25. A portion of the program follows:

Friday, April 24, 2 p.m. Leader, A. H. Bell, Illinois State Geological Survey.

"Researches on the Underground Geology of Illinois," L. E. Workman, associate geologist, Illinois State Geological Survey.

"Studies of Outcropping Strata in the Illinois Basin," J. M. Weller, geologist, Illinois Survey.

"Flow of Fluids Through 'Oil Sands'," R. J. Piersol, physicist, Illinois State Geological Survey.

"Studies of Repressuring and Water Flooding," A. H. Bell.

"Training in Petroleum Engineering," R. Larson, associate in Mechanical Engineering, University of Illinois.

Saturday, April 25, 9:30 a.m.—Symposium. Chairman, William Bell, president, Illinois-Indiana Petroleum Association, Robinson, Ill.

"A Comprehensive Survey of Reserves and Underground Conditions in Illinois Oil Fields," William Bell.

"Problems in Improved Oil Recovery," Millard Flood, engineer, Ohio Oil Co., Marshall, Ill.

"The Permeability of Oil Sands in Relation to Improved Recovery," W. S. Corwin, manager, Tide Water Oil Co., Robinson, Ill.

"Present Status and Future Possibilities of Acid Treatment in Illinois Fields."

"Relation of Imports and Exports of Petroleum to the Domestic Industry," W. H. Voskuil.

TECHNICAL ABSTRACTS

Physical Properties of Hydrocarbon Oils—Relations Between Molecular Weight and Concentration in Dilute Solution

By HARRY T. HALL and HAROLD M. SMITH
U. S. Bureau of Mines

Kansas City meeting of American Chemical Society

In determining the molecular weight of petroleum fractions by the cryoscopic or ebullioscopic methods, it is customary to determine the apparent molecular weight, m, at various concentrations and extrapolate the data to zero concentration. This paper presents data which relates the slope of the line m= SC with the extrapolated molecular weight, M. The use of the formula thus derived enables the calculation of M, from a single depression of the freezing point (or elevated boiling point) of any solvent the characteristics of which have been previously determined. The formula:

$$M = \frac{\frac{KC M_s}{\Delta}}{1+1.24C} = \frac{m}{1+1.24C}$$

where $C = \frac{w}{W}$, is suggested for benzene (cryoscopic) and considerable data are presented to support it. Equations of this character are given for benzene and ethylene bromide. Comparison of calculated and actual results are also given which show that for the data presented the suggested method applies fairly well.

Viscosity Temperature Susceptibility Coefficient as an Index of the Effect of Temperature on the Consistency of Asphalts

By H. G. NEVITT and L. C. KRCHMA
Socony-Vacuum Oil Co., Inc.

Before Kansas City meeting, American Chemical Society

If as much as the absolute measure of consistency is viscosity, the authors point out that the change of consistency of an asphalt with temperature would be more logically measured as the change of viscosity with temperature. The objections to the usual empirical susceptibility indices are discussed and the requirements of a satisfactory index outlined. The viscosity-temperature susceptibility coefficient (V.T.S.) is presented as a more fundamental viscosity-temperature index based on the A.S.T.M. viscosity-temperature formula and mathematically represented as

$$S = 0.221 \frac{\text{Log}\ (V_1+0.8)}{\text{Log}\ (V_2+0.8)} \Big/ \text{Log}\frac{T_2}{T_1}$$

where S is the V.T.S., V_1 and V_2 the absolute viscosities at specified absolute temperatures T_1 and T_2. Graphically S would be the slope of a straight line connecting the two points obtained by plotting on the A.S.T.M. Chart D-341-32T the viscosities of an asphalt as obtained at two temperatures. Data presented indicate that the V.T.S. is applicable to a wide range of temperatures, consistencies and viscosities, whereas the empirical indices are limited to definite temperatures and relatively narrow ranges of consistency.

The authors state in their conclusion that "In general the V.T.S. appears best to meet the technical and practical requirements of fundamentally defining the viscosity temperature characteristic for a wide range of consistencies and temperatures, which was not heretofore practical with the usual empirical consistency index. Moreover, the V.T.S. appears more consistent and uniform and has more physical significance than the "Fluidity Index." The latter was the most consistent of the indices reviewed and although empirical appears to be, in conjunction with the indices suggested by Holman, one means of characterizing asphaltic materials. The previous discussion of the merits of the V.T.S. versus other indices has no necessary bearing on the qualities of the asphalt for specific uses (quite possibly some of the indices reviewed do have merit in this connection, due to the fact that other than consistency characteristics are involved). That is, at present no correlation is suggested between the desirability of the product and the V.T.S. except where the change in viscosity with temperature is the only factor to be considered."

The Effect of Sulfur Compounds Upon Lead Response

By S. F. BIRCH and R. STANSFIELD
Anglo-Iranian Oil Co., Ltd.

Kansas City meeting of American Chemical Society

The relation of sulfur compounds in gasoline to lead response are investigated, the term "response" being taken to mean increase in the anti-knock value upon the addition of tetraethyl lead. A synthetic motor fuel consisting of 65 per cent iso-octane and 35 per cent n-heptane was made and to this fuel small quantities of the various types of sulfur compounds likely to be present in petroleum distillates were added. The knock rating of the blends alone were determined and also after definite quantities of tetraethyl lead had been added. It was noted that sulfur combined as thiophene had the least lead effect while sulfide-, mercaptan-, disulfide-, trisulfide-, and thioglycol-sulfur produced effects increasing in the order given. The authors note that of particular interest was the fact that the sulfides all produced the same drop in response for a constant sulfur content and that the molecular weight of the group attached to the sulfur atom had very little effect. The investigation revealed that while the pro-knock tendency of ethyl trisulfide was to be expected, from analogy with the peroxides, the fact that disulfides showed no apparent effect was surprising in that it was not greater. They found that with ethyl disulfide, the lower the concentration of disulfide, the greater in proportion was the effect upon the lead response. Blends of hydrocarbons also were investigated. Cyclohenene was found to display unusual properties due to preignition. Blends of heptane and olefin showed poor lead response and considerable reduction due to sulfur compounds, these results tending to throw some light upon the very poor response shown by certain gasolines containing cracked distillates. Experiments were also made with a few cracked and straightrun gasolines, the work with Iranian and Venezuelan straightruns indicating that a saving in lead may be realized by thorough desulfurization.

Physical and Chemical Properties of Petroleum Fractions
1. Behavior in Dilute Benzene Solutions

By HARRY T. HALL and HAROLD M. SMITH
U. S. Bureau of Mines

This paper dealt with attempts to obtain concordant molecular weights from cryoscopic measurements in dilute solutions of benzene and reported results obtained by the Bureau of Mines and by cooperative investigators. A modified Beckman cryoscopic method for molecular weights is described. Results obtained with this apparatus using benzene as the solvent are given for oils having molecular weights of approximately 200, 300, 500 and 700. Comparative cryoscopic data from 11 cooperating laboratories for these same oils in benzene solution are given and discussed. Data are presented showing the effect of impurities in the solvent (aside from moisture), and also the effect of moisture, on determination of the cryoscopic constant and molecular weight. The presence of impurities is probably at least a partial explanation of the discrepancies universally found in cryoscopic determinations of the molecular weights of oils. The authors interpreted the data obtained concerning naphthalene in benzene through the concentrations used as follows: (1) The constant-concentration curve for pure dry solvent will have almost no slope and by extrapolation will give a value that virtually agrees with the theoretical. (2) The presence of impurities, aside from moisture, in the solvent will lead to higher values for the constant and cause considerable slope in the constant-concentration curve. (3) The presence of moisture in otherwise pure solvent greatly increases both the value of the constant and the slope of the constant-concentration curve. (4) The presence of moisture in impure solvent increases the value of the constant somewhat, but makes little change in the slope of the constant-concentration curve.

Laboratory Bubble-Cap Columns of Glass

By JOHANNES H. BRUUN
Sun Oil Co.

Before Kansas City meeting of American Chemical Society

This paper contains a description of two all-glass bubble-cap columns of a greatly improved design. These columns are exceedingly easy to operate and may be used for vapor velocities up to 1.0 and 2.2 feet per second, respectively. Since the H.E.T.P. (height of equivalent theoretical plate) of one of these columns is about 2 cm., it was found feasible to build columns with separating powers equivalent to between 100 and 150 theoretical plate in a laboratory of average height. The advantage of the columns described in this paper is that its efficiency is retained indefinitely, while the efficiency as well as the throughput of columns containing metal packings decreases as a result of corrosion. Thus, reproducible results can be obtained over indefinite periods of time. The author states that in using the new columns, for a given liquid the jacket temperatures may be varied within wide limits without causing any disturbances or flooding. Another feature of the column is the fact that it is possible for the operator, by a glance at the liquid levels in the side-arms, to get a rough indication of the rate of boiling. The author states that perhaps the most important improvement is the elimination of the excessive vapor friction exhibited by the earlier bubble-cap columns through an unproportionally high liquid head in the side-arms.

Fibrous Materials Aid Restoring Lost Drilling Well Circulation

By ARTHUR LANGTON
Barlod Sales Co.

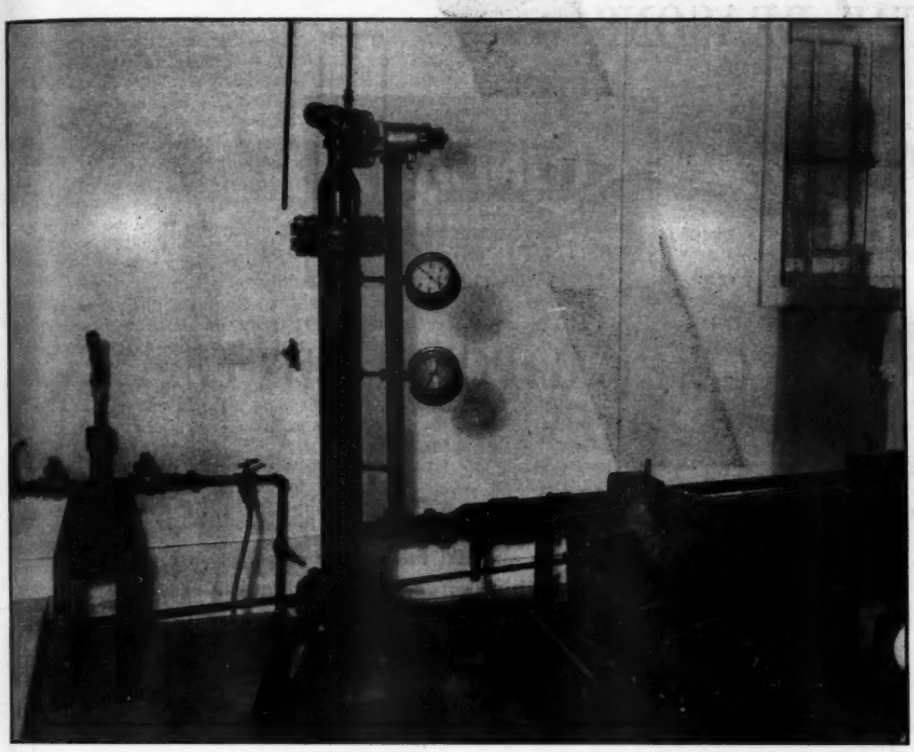

Fig. 1—Photograph of special filter press showing test chamber and pressure gauges. Press is used for determining the value of fibrous materials as aids to restoring circulation

New interest has been aroused in the old problem of lost circulation in rotary drilled wells by research which has been carried on in the field and in the laboratory by various oil companies and our company. As a result an effective material to regain circulation has been developed and a method for its use has been perfected.

By lost circulation is meant the partial or complete loss of drilling fluid from the hole while drilling. In general this loss occurs under any of the following circumstances:

1. When an extremely porous water or depleted oil sand is exposed in the open hole.
2. When gravel formations or water sands containing gravel are drilled through.
3. When fractured or fissured formations are penetrated.
4. When large-creviced or cavernous areas are penetrated.

Extensive research has demonstrated that mud solids do not penetrate the pore spaces of the ordinary oil sand because the grain size, and consequently the pore spaces, are in general relatively small. Even though the hydrostatic head of the column of drilling fluid increases with the depth of the hole, the pressure is never sufficient to force the mud into the microscopic pore spaces in the clays, shales, limestones and other formations in the great majority of wells. Water, not mud, is driven into the formation leaving the mud solids on the wall of the formation in the form of a filter cake. This process is carried on until no more water can penetrate the deposited filter cake, at which time filtration ceases and the cake has reached its maximum thickness. The thickness of the cake will vary from an eighth to one and one-half inches, depending upon the characteristics of the drilling mud being used. The higher the percentage of gel-forming colloidal material contained in the mud, the thinner the resulting cake will be.

However, there are occasional wells and sometimes entire oil fields with fractured zones and pore spaces large enough to permit the passage of drilling fluids with resulting loss of circulation. These are usually water sands in which the grain size and the corresponding pore spaces are very much larger than those of the ordinary oil sand. In some cases they may be depleted oil sands which happen to be more porous than the general run of oil bearing formations. In this latter type it is usual for only partial loss of circulation to occur, although entire loss may develop if the pore spaces are great enough.

More frequently complete loss of circulation takes place in gravelly beds which are encountered during drilling or in sands containing a high percentage of gravel-gravel referring to individual stones varying in size from an eighth of an inch up to a matter of three or four inches.

Fractured or fissured formations may cause partial or complete loss of circulation. These formations usually have been deformed by powerful stresses after they were laid down, with the result that they contain innumerable small cracks into which the drilling mud may be lost. Sometimes these small cracks have developed until they are from one thirty-second to one-quarter of an inch in size. Often they are filled with soluble material which is dissolved by the water from the drilling fluid, allowing easy escape of the mud.

In extreme cases crevices are penetrated by the drill which may be of spectacular dimensions, being veritable caverns. When such underground holes are encountered, circulation is lost imme-

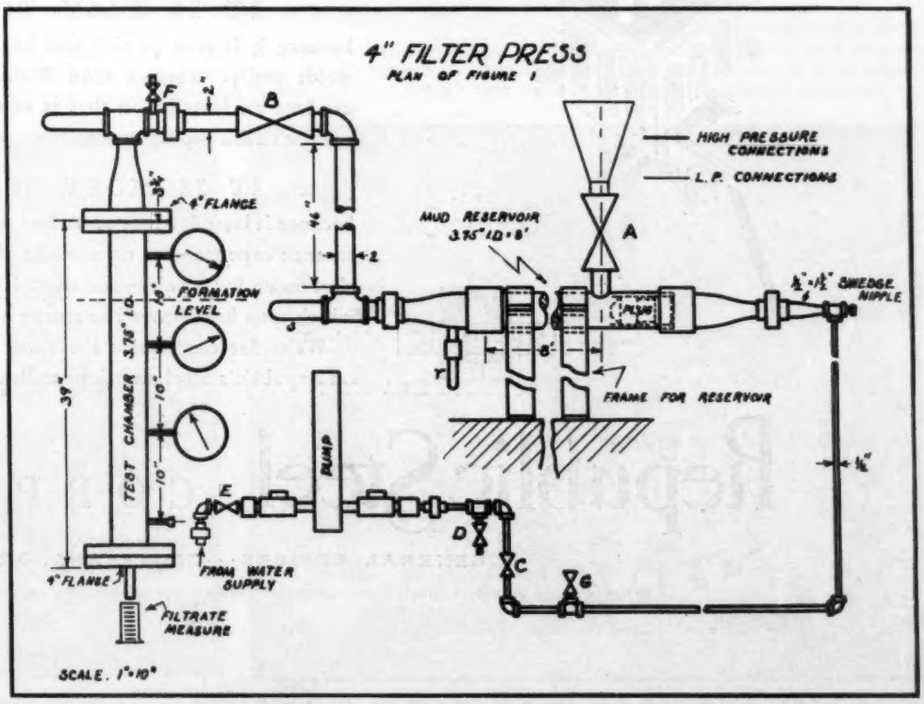

Fig. 2—Diagram of special filter press designed to reproduce bottom-hole conditions. Fiber-bearing muds are forced upon synthetic formations at pressures up to 5,000 lbs. per sq. in.

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diately, and to regain it taxes the ingenuity of the most experienced operators. It is fortunate that this condition is rarely encountered.

The principle of restoring lost circulation is to plug the pore spaces or crevices by the introduction of suitable materials into the well. The plug or seal must be built up in such a manner that it will withstand the pressure of the fluid column in the well. Up to the present almost everything has been used by drillers at one time or another in desperate efforts to restore lost circulation when a cavernous formation has been penetrated. Cottonseed hulls, beet pulp, straw, chopped rope, hay, peat moss and fibers of all kinds have been tried. In some cases the results have been good and in others poor or worthless. Many operators, failing to recognize that they are confronted with an underground tunnel, have tried to stop the expensive loss by using more and more drilling fluid. There have been cases in which thousands of barrels of mud have been pumped away in this manner. Most of the cavernous formations into which circulation is lost are filled with water and pumping mud into them merely pushes the water away from the hole. Such formations must be filled completely with mud for this method to be of any use, and most of them are too expensive for this.

Of course, where loss of circulation is incomplete or where the loss is taking place into a sand, a mixture of highly concentrated colloidal clay—such as Aquagel—and water will regain circulation in a short time. A mixture of 10 per cent by weight of Aquagel and water will form a mud about as thick as can be pumped down a drill pipe. Such a mud will not be thinned by contact with water in the sand and will set into a gel strong enough to support the weight of the fluid column in the well provided the pore spaces are not too large. This 10 per cent estimate of a paste should not be taken too literally because of the great variation in oil field waters. The correct proportions of colloidal material and clay should be determined experimentally.

Restoring Circulation

Field and laboratory work so far has failed to reveal any simple and certain method of restoring lost circulation, the chief reason for this being that the operator rarely has a means of knowing into what sort of a formation his mud is escaping; that is, except where a similar condition prevails throughout an entire field, in which case he may be familiar with the thirsty formation from previous experience. But mostly the only procedure he can follow is that of trial and error.

This does not mean necessarily that he should snatch at straws; even in a cut-and-try process there can be incorporated some evidence of system. First the operator should try to regain lost circulation on the assumption that the loss is taking place in a porous sand. This not being successful the operator may be reasonably sure that the loss is taking place into a formation of higher porosity than that of the sand. The next step should be to attack the problem as if a fractured or slightly creviced formation had been encountered by the drill. If the loss continues it may be assumed that the fluid is escaping into a large crevice.

Fig. 5—Typical filter cakes taken from filter press. The two outside cakes were deposited by mud containing combinations of Fibrotex and the middle cake by mud containing fibers from beet pulp

Whatever the case, the driller must remember that the seal must be made on the inside of the thief structure. Failure to keep this in mind has been responsible for the failure of many attempts to restore circulation. Materials such as cottonseed hulls and beet pulp are too coarse to enter any but the coarsest formations, with the result that they are deposited on the surface of the wall opposite the porous formation until a large enough filter cake is built to stop the filtration (see Figure 5). As soon as the bit is withdrawn from the hole most of this filter cake is scraped off and circulation is lost again. With the seal built up in the formation itself by the use of effective fibrous materials, the passage of the drill pipe up and down the hole will have no ill effect.

Obviously, it would be extremely difficult to find any one material which would seal the pore spaces of all sands with equal effectiveness; therefore, it is necessary to approach each problem of lost circulation progressively as has been described; first, to assume that the thief formation is a highly porous sand, and then trying the correct treatment for each successively larger formation until circulation has been restored.

Of course, all of the above types of lost circulation can be overcome by the use of gel-cement, which is ordinary portland cement and water combined with a small percentage of Aquagel. This per cent is just great enough to change all of the water in the cement into a gel, thus preventing its loss into the formation and consequent shrinkage of the cement. Gel-cement easily can be placed in the hole to seal effectually practically any formation, even a cavernous one. However, with the use of gel-cement it is necessary to allow about 24 hours for it to set, after which time any excess cement must be drilled out. Since time is of great importance in drilling it is advisable for the operator to try the other methods of restoring lost circulation before he resorts to gel-cement. Of course, if he knows that he has penetrated a cavernous formation, it would be best for him to use the cement at the start.

Various chemicals have been tried from time to time to restore circulation. These depend for their effect upon the formation of a plastic mass or a hard rocklike solid in the structure into which circulation is being lost. Usually when this method is used one of the chemicals in powdered form is added to the drilling mud and thoroughly mixed with it. The other chemical is then added to the mud in the proper concentration to make the desired reaction take place at the requisite time. Among chemicals which have been used for this purpose from time to time are calcium chloride and sodium silicate, aluminum sulfate and sodium silicate. The objection to chemicals is that they are expensive to employ and their use entails considerable risk in that the setting action may take place before the drill pipe can be removed. Since gel-cement will do anything that can be accomplished by these chemical combinations and at the same time will cost less than one-tenth as much, it is difficult to see the advantage of the use of chemicals.

Special Filter Press

In its Los Angeles laboratory the Baroid Sales Co. set up a special filter press with a 4-inch test chamber for the purpose of determining the value of various fibrous materials as aids to restoring lost circulation. This apparatus, (see Figures 1 and 2) designed as nearly as possible to approximate bottom-hole conditions, consists in the main of a cylindrical testing chamber in which fiber-bearing drilling muds are forced upon synthetic porous formations under any pressure up to 5,000 pounds per square inch, but most of the tests were made at 3,000 pounds per square inch. Pressure is obtained from a hydraulic pump which drives a piston or plug through a second cylinder containing the fiber-laden fluid. From this pressure cylinder the fluid is forced directly upon the formation contained in the test chamber.

All tests made thus far have employed a standard California clay used extensively as a base for drilling fluids. This Mojave clay, as it is known, had its wall-building and colloidal properties im-

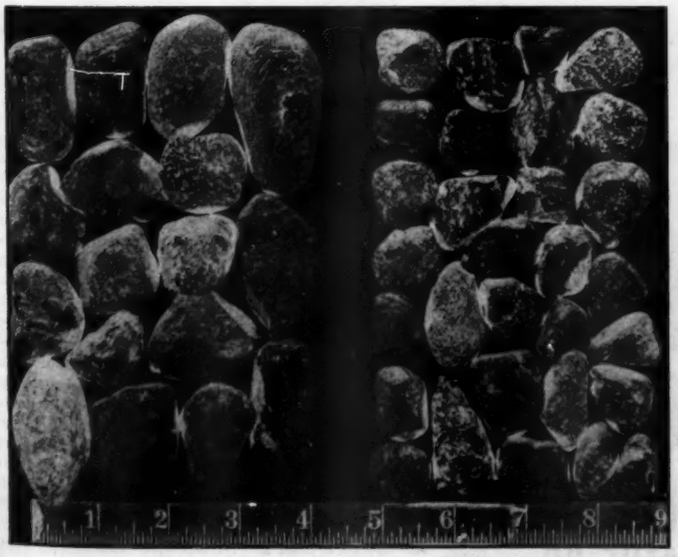


Fig. 3—Typical gravel used in the 4-inch filter press to test the efficiency of fibrous materials for restoring lost circulation

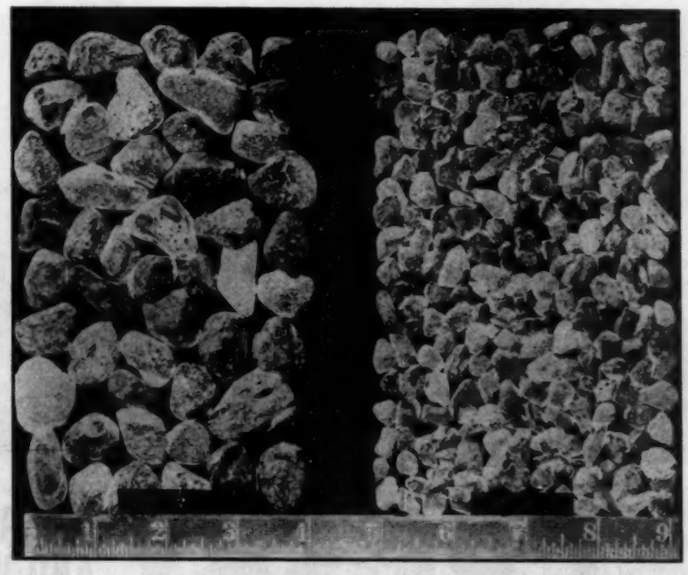


Fig. 4—One-half and one-fourth inch formations used in press to test the efficiency of various fibers as aid to restoring circulation

proved by the addition of Aquagel. The formation to be tested was placed in the test chamber while the fibrous material was being thoroughly mixed with the mud. Next this fiber-laden fluid was placed in the pressure chamber from where it was forced upon the formation. Pressure was applied until either a seal had been formed or it became apparent that an effective seal was not going to form. Wood fiber, shredded bark, cottonseed hulls, beet pulp and various treated and untreated sugar

Fig. 6—Small-strand fiber tested in filter press

cane fibers were among the materials tested. The formations used in these tests consisted of the following:

1. Ottawa sand (through .034-inch mesh screen and retained on .0198-inch mesh screen).
2. Ottawa sand (through .0198-inch mesh screen and retained on a .0082-inch mesh screen).
3. One-fourth inch formation (gravel through three-eighths inch mesh screen and retained on one-fourth inch mesh screen).
4. One-half inch formation (gravel through three-fourths inch mesh screen and retained on one-half inch mesh screen).
5. Three-fourths inch formation (gravel through 1-inch mesh screen and retained on three-fourths inch mesh screen).
6. One-inch formation (gravel through 1½-inch mesh screen and retained on 1-inch mesh screen).

Typical gravel formations used in these tests are illustrated in Figure 3 and Figure 4.

Before each run the muds were tested for viscosity on the standard Stormer viscosimeter and the readings taken in centipoises from the weight in grams required to drive the spindle at 600 r.p.m. This instrument was also used to determine gel-strength, while additional viscosity tests were taken in the Marsh funnel and recorded as the time in seconds for 500 cc. (total contents) of the mud in the funnel to be discharged. Hydrogen-ion concentration was determined by the Beckman Acidimeter and the Wulff pH Tester.

Results of Test

As a result of these tests it was found that the two materials now known as Fibrotex 1* and Fibrotex 2* (Figures 6 and 7) were the most efficient: that is, they made the quickest and most effective seal, allowing only a small rate of filtration, and they deposited an extremely thin filter cake. The tests showed that a combination of these fibers mixed in a mud containing the proper percentage of colloidal material would restore lost circulation in any formation where the size of the pore space or fissures does not exceed the size of the pore spaces in the 1-inch formation which was used in the tests and which is illustrated in Figure 3.

Of the various percentages tested it was found that a proportion of 3 per cent by weight of the No. 1 fiber to the weight of the mud resulted in the thinnest cake and the most impervious seal on the formations up to and including the one-half inch formation. Similarly a combination of 1.5 per cent by weight of No. 1 and 1.5 per cent by weight of No. 2 sealed the three-quarters and 1-inch formation most effectively and with the thinnest seal. Cottonseed hulls, beet pulp and similar materials were not satisfactory because before an approximate seal was obtained a thick filter cake had been deposited on the formation.

*U. S. patents pending.

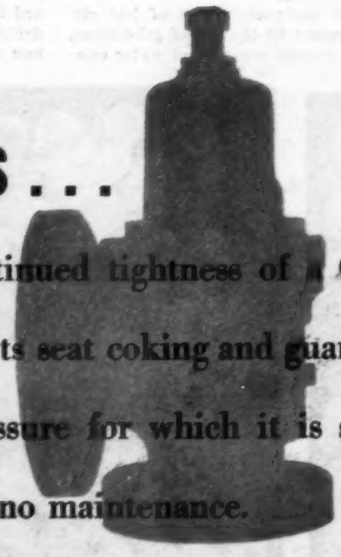
In developing these fibers it was found by the Baroid engineers that a combination of fibers gave better results than fibers of uniform size, the principle involved being that the smallest fibers would penetrate deepest into the formation and plug the smallest pores, thus allowing the larger strands to form a network upon which a seal could be built. Consequently, great care has been exercised in the final selection of the proper sized fibers to give the most efficient results in restoring lost circulation. Chemical treatment also has added to the quality of the fibers. That all this extra care is necessary in the choice and preparation of materials is indicated by the fact that the filter press proved that of two fibers appearing to be duplicates to the casual observer, the performance of each might be entirely different.

Fig. 7—Fibrotex No. 2, a fibrous material used to prevent loss of drilling fluid from hole

For crevices or fissures in which the cross sectional area is greater than the interstices in the 1-inch formation, gel-cement should be used. In such a case it often would be advisable to use an equal mixture of the two fibers. The total amount to be added to the cement in this manner should be determined by experiments before the cement is introduced.

Fractured Formations

In wells in which the drilling continuously penetrates fractured formations for any length of time, as in the Lost Hills area of California, where as much as 2,000 feet of continuous fractured formation has been penetrated, Fibrotex added to the drilling mud would greatly reduce the difficulties encountered as the crevices or fractures would be plugged off continuously as drilled, thus preventing the almost continuous loss of circulation. In the particular area referred to above, the fractures contain water under high pressure and it is, therefore, necessary to use extremely heavy weighted muds. In such a locality careful measurments could be made of the quantity of mud being lost from the suction pit and a slug of Fibrotex could be introduced as soon as the loss reached major proportions. After a seal has been made any fiber returning to the surface could be segregated for further use, because it is so constituted that it will not disintegrate over a long period of time. Of course, where fibers are being used continuously, the use of a mud screen would be out of the question because it soon would become clogged. However, in fractured formation this might be the least of two evils.



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By-Pass on Compressor Lines

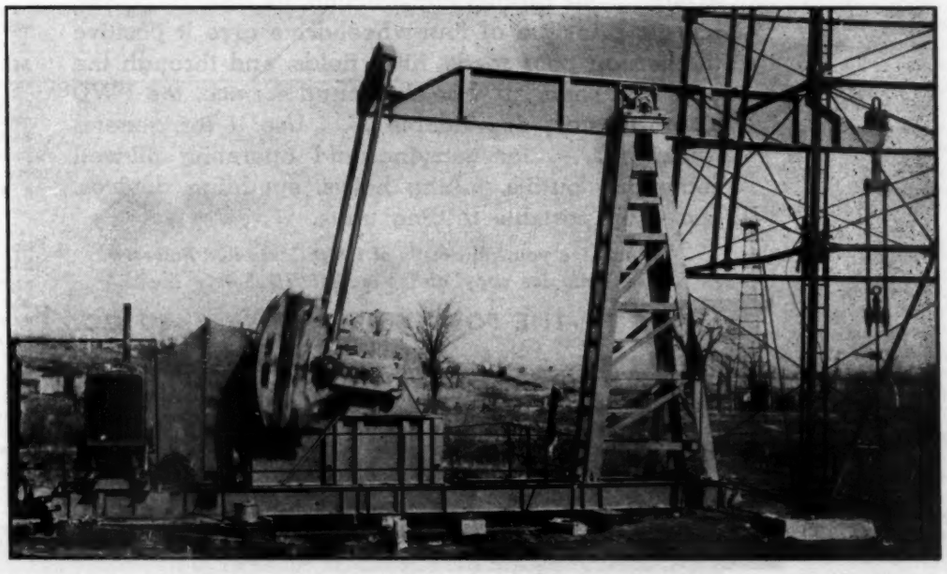
One major oil company operating a large gas lift plant in the Oklahoma City field makes use of 2-inch by-passes on their 10-inch compressor lines for the purpose of relieving the pressure on the 10-inch valve. This enables the plant operator to close the valve more easily and also reduces the amount of wear on the valve gates by keeping them from being bent or disfigured by the high pressure. This is due to the by-pass taking part of the load, and if the by-pass valve is open while the 10-inch gate is being closed all of the pressure is not forced on the latter. This plant is one of the largest flowing plants in the field, operating twenty 230-horsepower compressors. It was constructed less than a year ago and was one of the latest plants built in the north extension of the field. All header-piping is above ground thus enabling easy detection of leaks and also any necessary repair work may be done without digging out the pipe.

Convenient Wrench Rack

The outstanding feature of the wrench rack shown in the accompanying photograph is that it is placed in the center of the lease warehouse yard thus making it very convenient for trucks to drive alongside the rack and load or unload the heavy wrenches. Other features are the ease of taking inventory and its usefulness in keeping the wrenches off the ground. Old casing and pipe were used for constructing the rack, the uprights being held together by crossties of welded 2-inch pipe. Horizontal supports on which the wrenches are hung were made by notching the uprights and laying short lengths of pipe in the grooves.

Portable Twin-Crank Pumping Unit for Testing Wells

A major operator in the Seminole area is using the portable twin-crank pumping unit in the accompanying picture as a test unit for testing wells being produced with equipment that for various reasons may not be able to produce the well to capacity. In such cases the unit shown is moved to the location and is used to test the full potentialities of the well, as thoroughly as a standard rig or pumping unit is capable of doing so. The well in the picture was being pumped with a large pumping jack, power being furnished by back side crank equipment at another well on the lease. After the installation of the jack the well was acidized and the productivity of the well increased to such a point that the jack could no longer pump oil from the hole as rapidly as the well was capable of producing it. Not knowing the amount of fluid the well was capable of producing the operators tested the well as



shown and production was increased from the 140 bbls. of oil daily pumped by the jack to 520 bbls. of oil daily with the unit, and by use of a recording bottom hole pressure bomb placed beneath the working barrel it enabled the operators to determine that even the unit would not produce the well to capacity, as a considerable quantity of water had to be produced to obtain the oil. The unit will be moved from the location and a submergible electrical centrifugal pump of large capacity will be installed and the well again tested.

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Thermodynamic Reactions Involved in Cracking of Propane Gases

By HARRISON L. HAYS
Petroleum Engineering Department, Colorado School of Mines

The recent development of several processes for the commercial pyrolysis of natural and refinery process gases and the consequent polymerization of these gaseous cracked products to a high liquid content of olefinic and aromatic hydrocarbons has unfolded an entirely new vista, in so far as the increased profitable utilization of our resources of natural gas is concerned. During past years only a fraction of the natural gas which has been produced has been used for industrial and domestic purposes, whereas a vast volume which has amounted to many millions of cubic feet per day has been irretrievably lost through the residue gas vents of the many natural gasoline plants throughout the country. It is interesting to consider that a large proportion of this hitherto wasted material is now finding its way into the engines of airplanes and automobiles as an important component of "poly" gasolines. The oil companies are, therefore, "killing two birds with one stone," for they are simultaneously utilizing a waste product and making available a high octane number blending material which should decrease their finished gasoline production costs through a diminished use of expensive artificial antidetonants.

Pyrolysis or cracking is the term applied to the process whereby materials of a more or less saturated hydrocarbon character are, through the employment of certain conditions of temperature and pressure caused to undergo a molecular rearrangement to materials of highly olefinic and or of highly aromatic character. The ultimate products of such a process are hydrogen and carbon. However, the cracking is controlled in such a way that the important products are gasoline and fuel oils, with gas and coke appearing as by-products which are in many cases difficult to dispose of. This gas ordinarily is used as the charging stock to polymerization units without having undergone further pyrolysis. However, natural gas which is composed of hydrocarbons of the methane series is always subjected to cracking in order to give it a high content of olefinic hydrocarbons before polymerization is resorted to.

Polymerization may be defined as a process during which two molecules of a substance are united to form a larger molecule or "polymer." When the olefin hydrocarbons (such as ethylene and propylene) are subjected to the proper conditions of temperature and pressure, polymers or double molecule products are formed. Under the proper conditions, as indicated, and with or without the use of catalysts, the process may be so controlled as to result in a gaseous product which carries a high percentage of olefin and aromatic compounds which are normally in the liquid state. The extraction of these from the polymerized gases make available to the refiner a liquid product which has a high blending value as an antidetonant in the production of high octane number commercial gasolines. This then is the material which is an important component of the highly advertised "poly" gasolines.

A thermodynamical analysis of the reactions involved in the cracking of propane is given by the author, cracking being the first stage in the manufacture of polymerized gasolines using natural gas as charging stock.

Chemical Reactions

Because of the present interest in the utilization of natural gas as outlined above, a thermodynamic analysis of the cracking of propane may be of general interest. Propane has been selected because of the fact that it is one of the important constituents of natural gas which serves as a charging stock for the pyrolytic process.

The application of thermodynamics to chemical reactions is necessarily limited in its scope to the determination: (1) Which of several reactions will lead to the most stable state of the thermodynamic system (2) whether a possible reaction can actually occur, (3) the magnitude of the driving force, ΔF, which tends to cause the reaction to proceed, and (4) the conditions for equilibrium in the system. Therefore, it is obvious that a thermodynamic analysis, in the light of our present knowledge, provides no basis whatsoever for the prediction of the velocity of any reaction, that is, for the rate at which the products are formed.

Since the value of the free energy, ΔF, is the criterion through which the factors mentioned above may be evaluated, it is essential that sufficient data be available for the accurate calculation of this important function. A determination of the value of ΔF may be made by any one of four different methods:

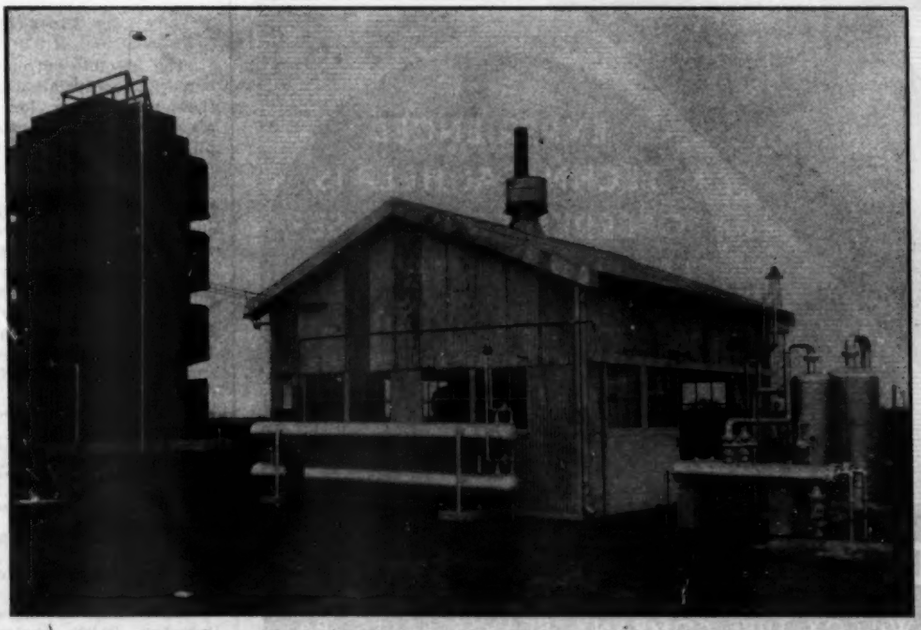
1. Measurement of the equilibrium constant, K_p, and the calculation of ΔF from the relationship, $\Delta F = -RT\ln K_p$, where ΔF = the free energy of a system in equilibrium in calories; R = the molar gas content = 1.987 calories; T = absolute temperature in degrees Kelvin; and K_p = the equilibrium constant at constant pressure.

2. Determination of the reversible electromotive force, E, of an electric cell and the calculation of ΔF from the relationship, $\Delta F = -NFE$;

3. Calculation of ΔF by means of the Third Law of Thermodynamics from the relationship, $\Delta F = \Delta H - T\Delta S$; where ΔH = the heat of the reaction in calories; and ΔS is the change in entropy for the reaction which may be calculated from the absolute entropies of the components. ΔF and T have the same meaning as given in (1).

4. The calculation of ΔF by means of the combination of chemical equations with known values of ΔF. Due to the fact that reasonably accurate data are now available for the entropies of various organic substances, the Third Law of Thermodynamics has been selected as the basis for ensuing calculations, although the overall accuracy of the free energies calculated thereby is necessarily limited by the accuracy of the combustion data used in the determination of the heats of reaction. However, then in the calculation of these values more accurate data is now available due to the research of Rossini of the Bureau of Standards and others.

There are several possible reactions open to consideration in the decomposition of propane. However, from a study of the mass of available experimental data pertaining to these reactions, notably that of Hague and Wheeler, it seems probable that propane undergoes pyrolytic decomposition in accordance with the two following reactions:



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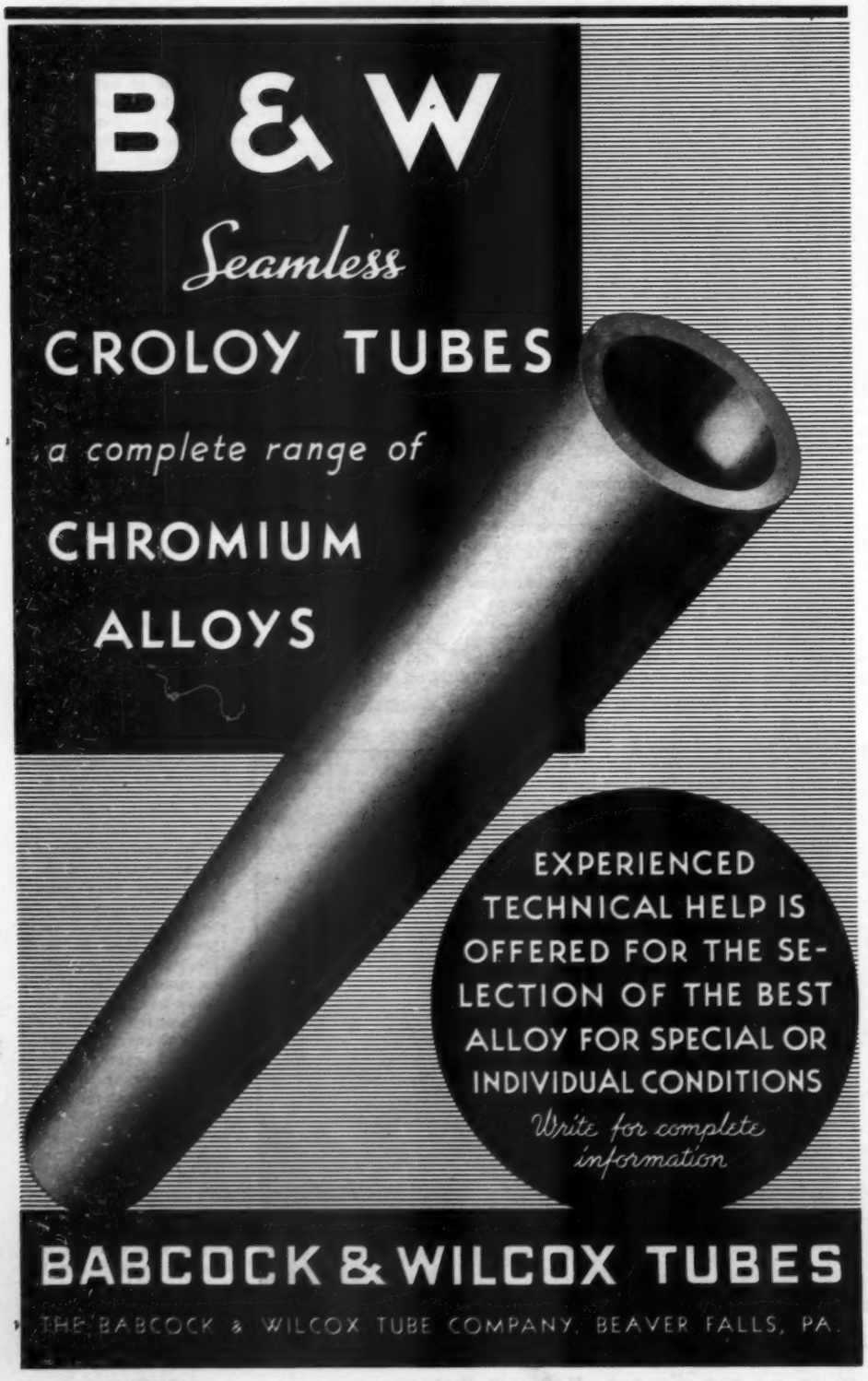
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(1) $C_3H_8 = C_2H_4 + CH_4$
(2) $C_3H_8 = C_3H_6 + H_2$

These two reactions apparently proceed simultaneously, but at different velocities, which results at 700° C., according to Hague and Wheeler, in Reaction (1) proceeding to the extent of approximately 61 per cent, whereas Reaction (2) proceeds to the extent of 35 to 39 per cent. The explanation is offered that the difference in reaction rates is due to the greater strength of the C-H bond which results in a tendency to demethanate through rupture of the C-C bond rather than to dehydrogenate at the given temperature. The addition of (1) and (2) results in a third equation:

(3) $2C_3H_8 = C_2H_6 + C_2H_4 + CH_4 + H_2$

All calculations will be based on Reaction (3) with the equilibrium mixture at 700° C. and under an absolute pressure of one atmosphere. At this temperature, deviations from the Ideal Gas Laws do not need to be taken into consideration for all of the components of the mixture are far above their critical temperatures.

Calculations Based on Reaction (3)

ΔH (Heat of Reaction at 700° C. or 973° K.)

$\Delta H_{298\ deg.\ K.}$ = Sigma ΔH (Products) — Sigma ΔH (Reactants)

$= (4{,}550 + 7{,}500 - 18{,}070 + 0) - 2(-25{,}390)$

$= 44{,}760$ calories.

The heat added between 298° K. and 973° K. can now be found by the use of the heat capacity functions of the various constituents.

Thus ΔC_p = Sigma C_p (Products) — Sigma C_p (Reactants)

$= (7.50 + 0.0280T) + (6.00 + 0.0150T) + (3.00 + 0.0228T - 0.0000048T^2) + (6.50 + 0.0009T) - 2(7.90 + 0.036T)$

$= 7.20 - 0.0053T - 0.0000048T^2$

where C_p = the molal heat capacity at constant pressure,

ΔC_p = the change in heat capacity for the reaction,

T = the absolute temperature in degrees Kelvin,

Then $\Delta H_{973} = \Delta H_{298} + \int_{298}^{973} C_p dT$

$= H_{298} + \int_{298}^{973} (7.20 - 0.0053T - 0.0000048T^2)\,dT$

$= 44{,}760 + 1{,}155$

$= 45{,}915$ calories.

The absolute entropies at 298° K. can be secured by extrapolation of heat capacity curves of these materials vs. log T (degrees K.) down to absolute zero. The area under such a curve multiplied by 2.303 (the conversion factor for logarithms from base 10 to base e) gives the desired entropy values. The addition of the values thus obtained for each of the hydrocarbons to the values for the change in entropy between 298° K. and 973° K. gives the absolute entropy at 973° K. Such a use of heat capacity data has not been necessary in this instance, because absolute entropies at 298° K. for the materials considered are available from Parks and Huffman and other reliable sources. The calculation of the value of the absolute entropy, S, for propane at 973° K. will serve to illustrate the method.

$S_{973}(C_3H_8) = S_{298} + \int_{298}^{973} \frac{C_p dT}{T}$

$= S_{298} + \int_{298}^{973} \frac{(7.90 + 0.036)\,dT}{T}$

$= 63.95 + 9.35 + 24.30$

$= 97.60$ calories/degree K.

Other values calculated as above are as follows: Propylene, 90.90; ethylene, 68.0; methane, 60.84; and hydrogen, 39.54. The value for propane at

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298° K. was secured by interpolation, using the values at this temperature for methane, ethane and n-butane in the absence of any other value.

$$\Delta S_{298} = \text{Sigma S (Products)} - \text{Sigma S (Reactants)}$$
$$= (90.90 + 68.00 + 60.84 + 39.54) - (97.60)$$
$$= 64.08 \text{ calories/deg. K.}$$

where ΔS = the change in entropy for the reaction.

The free energy, ΔF_{973}, for the reaction can now be calculated by means of the equation,

$$\Delta F = \Delta H - T\Delta S$$

in which the values just obtained for ΔH and ΔS at 973° can be substituted in the equation as follows:

$$\Delta F_{973} = \Delta H_{973} - T\Delta S_{973}$$
$$= 45{,}915 - (973 \times 64.08)$$
$$= -16{,}385 \text{ calories}$$

The negative value of the free energy indicates that propane will decompose at the given temperature in accordance with the stated reaction, whereas a positive value would have indicated the tendency for the propane to remain unchanged.

Calculation of the equilibrium constant, K_p, for the reaction is accomplished by means of the following equation,

Thus $\Delta F_{973} = -RT\ln K_p$

whence $K_p = \text{antilog} \dfrac{-\Delta F_{973}}{2.303 \times RT}$

$$= \text{antilog} \frac{16{,}385}{4.58 \times 973}$$

$$= 4{,}730$$

In order to calculate the value of the percentage of propane dissociated in accordance with the given reaction,

TABLE 1—THERMAL DATA

Substance—	Heat of formation at 298° K. (Cal./gm. mol)	Molal entropy at 298° K. (Cal./deg. K.)	Heat capacity function (T = deg. K.)
Propane	−25,390	*64.95	7.90 + 0.0360T
Propylene	4,550	63.10	†7.50 + 0.0330T
Ethylene	7,500	50.80	6.00 + 0.0150T
Methane	−18,070	43.95	3.00 + 0.0225T − 0.0000048T²
Hydrogen	0	31.23	6.50 + 0.0009T

*Estimated using the values for methane, ethane and N-butane.
†Estimated using the heat capacity functions for ethylene and N-hexylene. All other values used are from Parks and Huffman.

Let x = the percentage of propane decomposed (this also equals the number of mols of each product),

$2(1-x)$ = mols of propane undissociated and in equilibrium with the products at the end of the reaction,

$2(1+x)$ = totnl mols of reactants and products in the equilibrium mixture,

When 2 = the number of mols of propane entering into the reaction.

The partial pressures are,

$$p_{C_3H_8} = \frac{1-x}{1+x}(1) \quad \text{(1) atmosphere total pressure.}$$

$$p_{C_3H_6} = \frac{x}{2(1+x)}(1)$$

$$p_{C_2H_4} = \frac{x}{2(1+x)}(1)$$

$$p_{CH_4} = \frac{x}{2(1+x)}(1)$$

$$p_{H_2} = \frac{x}{2(1+x)}(1)$$

Therefore, $K_p = \dfrac{p_{C_3H_6} \times p_{C_2H_4} \times p_{CH_4} \times p_{H_2}}{(p_{C_3H_8})^2}$

$$= \frac{\frac{x^4}{16(1+x)^4}}{\frac{(1-x)^2}{(1+x)^2}} = \frac{x^4}{16(1-x^2)^2} = 4{,}730$$

Whence $x = 1.00 \times 100 = 100$ = percentage of propane dissociated.

Although equilibrium conditions in the ordinary sense are not attainable during the cracking operation, due to the continuous removal of reaction products from the cracking zone, such reactions can be considered in a state of instantaneous equilibrium. This assumption, therefore, permits the application of energy calculations such as the foregoing, for the purpose of determining the probability and the extent of the procedure of any reaction. Thus as has been indicated, thermodynamics when utilized in conjunction with the kinetics of any reaction, may render very valuable assistance in the preliminary investigations prior to the installation of equipment for any commercial chemical process.

Acknowledgment is made to the Mines Magazine, Colorado School of Mines, for permission to print this article.

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Pennsylvania Oil Association Receives Extraction Patents

The first three petroleum patents resulting from the research program conducted at State College under the auspices of the Pennsylvania Grade Crude Oil Association were granted to the Pennsylvania Petroleum Research Corp., the association's patent holding corporation, on April 14.

Two of these patents, in which Merrell R. Fenske and Wilbert B. McCluer are the inventors, numbered 2,037,318 and 2,037,319, relate to processes for solvent extraction of mineral oils and the third patent, in which Mr. Fenske is the inventor, numbered 2,037,125, relates to vacuum control.

The two solvent extraction patents are the results of extensive research and pertain to a fundamentally novel means for intimately mixing the oil and the solvent. In this process one of the liquids moves through the other while being maintained for the most part in a plurality of separate, relatively small streams.

The purpose is twofold, first, to obtain highly intimate contact between oil and solvent to increase the efficiency of the solvent; and, second, to avoid channeling of one liquid through the other, a difficulty experienced more especially when heavy oils are brought into contact with solvents by countercurrent or other relative flow.

While one of the liquids moves through the other in the form of separate streams as explained above, the second liquid may perform in a variety of ways. For instance, it may move countercurrently to the first liquid, move in the same direction but at a different rate, or it may remain stationary. Furthermore, the second liquid may be maintained in a body or in a plurality of separate, relatively small streams, the same as the first liquid, with the arrangement such that one stream of each liquid is brought into contact with a separate stream of the other liquid.

The process, being essentially one of thoroughly mixing liquid phases, is applicable to any method of solvent extraction of mineral oils regardless of the number of solvents.

In the first case, that is when the second liquid is maintained in a body, the apparatus comprises a tower having a plurality of spaced vertically arranged rods, chains, or other similar elements extending through the zone of contact. Because of the fact that when two liquids, such as solvent and oil, are brought into contact with a solid, one of the liquids wets the surface of the solid to the exclusion of the other liquid, the elongated elements extending through the zone of contact maintain one of the liquids in a plurality of separate streams by virtue of this preferential wetting feature.

In the second case, that is when the second liquid also is maintained in a plurality of separate, relatively small streams, the rods, chains, or equivalent elements are substituted by a plurality of tubes and the oil and solvent are caused to make contact with each other in these tubes.

Patent 2,037,318 contains the broad claims covering generically the mixing of any number of liquids by the foregoing process together with specific claims directed to the mixing of two liquids such as a mineral oil and a solvent.

Patent 2,037,319 contains claims directed specifically to the mixing of three or more liquids and particularly to the mixing of a mineral oil with two countercurrently flowing solvents.

Patent 2037125, which relates to a vacuum control, was developed by Doctor Fenske as the result of the necessity of maintaining an extremely low and constant pressure in the testing of oil samples by the Engler Index method. Doctor Fenske found that he could not buy a vacuum control sufficiently accurate to meet his needs; he, therefore, set about to invent and perfect a control of his own.

To show the success with which his efforts were met it is merely necessary to state that Doctor Fenske has had several of his controls in continual operation for several years maintaining an average absolute pressure of 1 mm. with the actual absolute pressure staying within a range from 0.99 mm. to 1.01 mm.

Considering the fact that the pressure varies but 0.01 mm. in either direction, it can be readily seen that no mechanical device could be made sufficiently sensitive to respond to such small differences in pressure.

In solving this problem Doctor Fenske took into consideration the fact that the boiling temperature of a liquid varies with the pressure on the liquid and further the fact that the change in temperature increases per unit change in pressure as the pressure approaches absolute zero.

The change in boiling point of a liquid at pressures in the neighborhood of 1 mm. is quantitatively much larger than the change in pressure, and in fact with some liquids is 12 to 15° C. per mm. change in pressure.

This fact made it possible to control change in pressure by means of change in temperature and by using a sensitive heat responsive device, a very close control of the pressure is afforded.

These patents were solicited by Hugo A. Kemman, the association's patent attorney. Mr. Kemman has prepared and filed a considerable number of patent applications covering various phases of experimental work conducted at the laboratory at State College.

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OIL AND GAS JOURNAL

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EXPOSITION ISSUES

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The Oil and Gas Journal's objective, in its Exposition issues May 14th and 21st, will be to build issues of great educational value, supplementing and rounding out the educational program of the Petroleum Exposition.

The Exposition will be an education in modern oil *equipment*. These two issues of "Oil and Gas" will publish many valuable Engineering and Operating technical articles dealing with field problems.

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Tulsa, from May 13th to 23rd will be the Mecca of all oil and gas men. The natural gas men will be here, following their Dallas convention May 8th. The A.P.I. holds its Midyear "Technical" meeting at Tulsa May 13th to 15th. The Natural Gasoline Association of America holds its annual convention here on the same dates. The Institution of Petroleum Technologists meets here May 15th.

Our big Exposition Issues will publish *in full, all* of the valuable Engineering and Operating papers presented at these meetings, and will carry many additional articles in this field prepared by our own staff writers.

Our May 14th Issue will also carry the Journal's annual survey of the Natural Gasoline Industry as well as several other valuable editorial features directly related to the exposition.

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Direct Current Generating Units Used for Crude Oil Pumping Stations

By W. S. DYER
Ajax Pipe Line Co.*

Direct current generating plants are best adaptable to both gathering and main line pumping stations where the generating of electricity is secondary to the pumping of crude oil.

Station crews are more or less inclined to expect electric equipment to work properly at all times, and as they are not electricians themselves they adopt a "hands off" policy in the maintenance and regulating of this equipment. This attitude has caused the carrier to make all such installations as near "fool proof" as possible.

Most of these installations consist of direct current generators running off each diesel oil engine in the station, and an emergency unit consisting of a small diesel engine direct connected to a direct current generator.

The generators selected are compound wound with commutating fields to take care of sudden overloads due to the starting of large motors. As the diesel engines operate at a wide range of speeds according to deliveries they are making and the different lines they are pumping through, the generators selected also have wide range of speeds, generally generating 125 volts at speeds from 600 to 900 r.p.m. Where there are several generators, they are connected in parallel at the switchboard; this offers an advantage in changing generators as the electric plant does not have to be shut down to make the change. It is often an advantage to run these generators in parallel when the diesel engines are operating at near peak output in driving the pumps; or at other times when the peak demand for electricity is greater than the capacity of one generator.

The best policy is to develop 120 volts at the switchboard where both lights and power are connected to the same generating plant; using 120-volt light bulbs in the station proper, and 115-volt light bulbs at the tanks, yards, and cottages. As most direct current motors are rated at 115 volts, and the installations are located within the station building, the voltage drop will seldom amount to more than five volts. Where motors are located outside of the station building the service should be large enough that the voltage drop will not be larger than 5 volts.

Even with the best equipment the market has to offer in direct current generators, there will still be fluctuations in the voltage due to starting and stopping of large motors on the system. Most of this is due to the fact that the prime movers are connected to pumps that are pumping oil and their governors are not sensitive enough to take care of such changes. This can be overcome with the installation of voltage regulators of the right type. While these regulators will not keep the voltage at a constant value, the fluctuations will not amount to more than 1 to 3 per cent variation; and when speed changes of the prime mover are made due to the lowering and raising of the pressure for pumping crude oil, these voltage regulators take care of the voltage and relieve the engineer in charge of this responsibility.

There have been arguments that alternating current is best adaptable for pumping stations. This may be a fact on main arteries where the speed of the operating engines is seldom changed, or where auxiliary engines are connected to the alternators and the speed can be maintained constant. Alternating current offers one big advantage and that is in the installation of induction motors from a safety standpoint. Four hundred forty volts can be generated at the switchboard and used for power services and stepped down to 120 volts for lighting circuits. If installations are located some distance from the switchboard and main pump building, the voltage drop can be taken care of in transforming. The frequency should be maintained at constant to keep transformer and motors from heating, and if the frequency varies, the horsepower rating also varies. This is almost impossible on pump stations where the generating of electricity is secondary to the pumping of oil.

The main argument against direct current for power is the commutator on motors and generators. This has long been a bugbear to users of direct current. Most of this trouble can be overcome with the proper care. As the brushes wear down the tension spring should be taken up accordingly. The commutator should be kept clean at all times, and this requires daily attention to motors that are in operation constantly. A dry piece of cheesecloth answers the purpose for this work. In cases where the commutator cannot be kept clean from constant care it may be due to the fact that the brushes are too soft, and in some cases brushes are too hard and tend to cut the commutator. If a high polish is kept on the commutator and the brushes are kept at the correct tension, a set of brushes should last for several years. I am in favor of undercutting the mica on commutators unless the motor is of a very low speed. Unless the brushes are very hard the mica will not wear evenly with the copper segments, and high micas are the forerunners of practically all commutator troubles. Loose brushes cause excessive sparking, and this in turn causes heating of the commutator. The expansion and contraction of the commutator, due to this excessive heat, eventually breaks it down.

Fifty per cent of future trouble is prevented in the proper installation of direct current motors. Each motor should be fused separately and with the proper size fuse. Starting rheostats should be installed on all motors of 1 horsepower and larger. They should be installed where the ventilation is good and access to minute inspection by the engineer on duty. It is dangerous to install direct current motors under floors where the ventilation is poor, or up near the ceiling where gases might gather even in the engine rooms, unless proper care is taken to make them well ventilated. This can be done by installing an intake pipe on the intake side of the motor. Combustion proof motors might answer the purpose better, but in most cases the first cost is prohibitive, and this type motor is not necessarily required for this installation.

Direct current motors require more care and maintenance than alternating current motors of the induction type, due mostly to the brushes and commutator. Other alternating current motors require just as much maintenance. Keeping a motor or generator clean from dirt and grease will prolong its life many years. With proper lubrication a set of bearings should last 20 years on moderate speed motors, and the motor itself should last until it becomes obsolete. The armature and fields should be cleaned yearly with naphtha or other preparations for this work, and varnished with a good grade of quick drying varnish, and at this time the oil journals should be washed clean and supplied with new proper grade of oil.

*Presented at the Petroleum Industry Electrical Association meeting, April 11, Tulsa, Okla.

Methods of Combating Corrosion and Electrolysis of Underground Lines

By V. J. SITTEL
Stanolind Pipe Line Co.*

Field surveys and studies by electrolysis crews of various pipe line companies have determined that any underground pipe line will have currents flowing on it. These currents may be of any magnitude from microamps to 200 or 300 amperes, depending on the soil condition and locality in which the line is laid.

These electrolysis, or stray currents on pipe lines are caused by external potentials which are impressed on the pipe line and can be classified into two general classes as follows: (a) Currents produced or generated by the galvanic action of soil to iron pipe. (b) Stray currents which flow through underground pipe lines as return currents from electrified railways and industrial power circuits.

Currents caused by soil to iron pipe galvanic action produces the major portion of electrolysis corrosion which the pipe line companies have to deal with. It is this class of electrolysis that we will discuss principally.

Pipe lines laid across country are exposed to many different kinds of soils containing different chemicals and percentages of moisture. As the pipe line is a continuous metallic circuit it is a path of low resistance to the flow of currents. It may be considered as a series of galvanic cells which generate and discharge currents between two different soil areas along the line that may be any distance apart, from several yards to several miles. The exact theory of the generation of the currents is not so important in electrolysis mitigation, but the theory of controlling the flow of the currents from pipe to soil is important. Electrolysis corrosion occurs at points where the currents leave the pipe line and enter the soil. Each coulomb of current carries a microscopic particle of iron with it which is deposited in the soil.

Pipe lines can be protected from corrosion to different degrees of perfection by the following methods: Reconditioning the pipe, cleaning, wrapping and coating with different kinds of asphalt dopes. This method insulates the pipe from the soil and prevents the galvanic action between soil and iron. This method is good as long as the coating is good, but a breakdown or fault in the coating allows moisture to enter and causes a concentrated corrosive spot which will penetrate the pipe quicker than if the pipe was left bare.

Cathotic protection is a method that is coming into use more and more. Its use is increasing in the East by the increase of rural electrification which is making power available at lower costs for force drainage systems.

To effectively protect a pipe line with forced drainage, or cathotic protection the pipe line should be maintained .3 volt negative to the soil, along the entire line. By maintaining this negative voltage on the pipe line all corrosive action is halted because the currents cannot flow from pipe to soil as the pipe is of lower potential. To maintain this negative potential between soil and pipe a forced drainage system is constructed along the line. Direct current is fed into the soil through ground beds and drained off the pipe line through the negative terminal.

This system is expensive in initial installation costs and operating power costs. The operating costs, when the power has to be purchased, will vary greatly, depending on the soil conditions and the pipe coating.

If the soil is dry and the pipe coating is good the resistance between soil and pipe will be high and a small amount of current will be drained but if the soil is wet and the pipe coating is bad or the pipe is bare, the resistance between pipe and soil will be low and greater current will be drained, and so it would be throughout the length of the

*Presented at the Petroleum Industry Electrical Association meeting, April 11, Tulsa, Okla.

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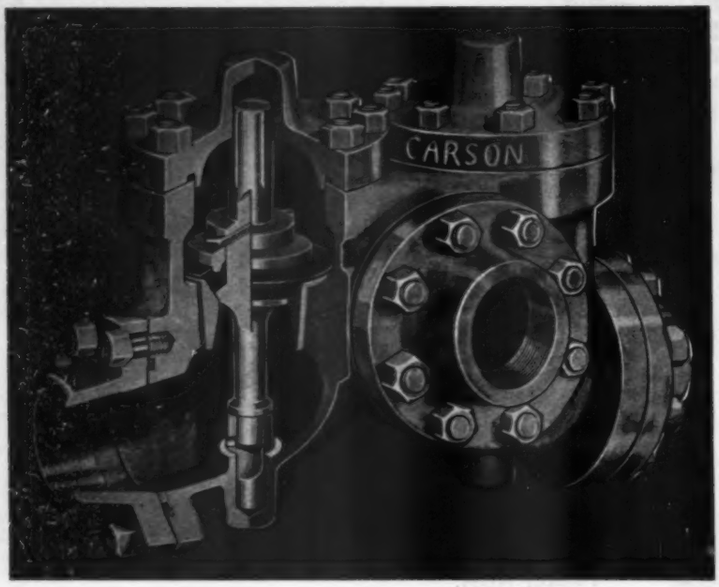

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line, one section taking more power for complete protection than another, depending on the local conditions.

Several pipe line companies are installing windmill generators along the line to furnish the electrical power for forced drainage. As the voltage and current drain is low, a 1 to 3-kilowatt D.C. generator will protect 1 or 2 miles of line. Manufacturers of these windmills and generators have developed their efficiency to start and run on 3 to 3½-mile per hour wind, and sell them at around $600 f.o.b. factory.

Windmill generators give good protection in localities where there is a fair wind most of the time; also they give sufficient protection in other localities because it is a definitely established fact that if drainage can be maintained 50 per cent of the time corrosion is definitely checked.

Every installation of cathotic protection is a separate problem in design, installation costs and operating costs and as we have not had the experience of installing either power or windmill force drainage I am not in a position to quote an example.

G. I. Rhodes, vice president of Ford, Bacon & Davis, Inc., has published in the February, 1936, issue of The Electric Journal an article entitled, "Electric Pipe Line Drainage," in which he gives drainage system designs and cost figures of protecting a 22-inch gas line. This article gives a fair idea of the details of such a system.

Tentative Program of N. G. A. A. Announced

While not yet complete in detail, the tentative program for the fifteenth annual convention of the Natural Gasoline Association of America to be held in Tulsa, May 13, 14 and 15, indicates the meeting will be one of unusual interest. Several innovations have been included which will be especially interesting to the natural gasoline field man and the technical papers cover a wide field calculated to touch intimately on some of the more perplexing problems of the industry.

Following registration on the morning of Wednesday, May 13, the first formal session at 1:30 p.m. includes:

President's address—T. R. Goebel, Skelly Oil Co.

Address—H. T. Ashton, Socony-Vacuum Oil Co., Inc., Lubrite Division.

Reports of standing committees covering work of past year and plans for 1936-1937.

Thursday, May 14

Morning Session

"Polymerization as It May Affect the Natural Gasoline Industry," R. C. Alden, Phillips Petroleum Co., Bartlesville, Okla.

"Operation Trends and Their Economic Effects," S. S. Smith, Shell Petroleum Corp., St. Louis, Mo.

"Legal Phases of the Natural Gasoline Business," James E. Allison, attorney, Breckenridge, Tex.

"Motor Fuel Grading by Volatility Indexes," W. W. Scheumann, Empire Oil & Refining Co., Okmulgee, Okla.

Afternoon Session

"Volatility and Engine Performance," Dr. G. G. Brown, University of Michigan, Ann Arbor, Mich.

"Design Changes in Engines and Their Relation to Modern Motor Fuels," Wheeler G. Lovell, General Motors Corp., Detroit, Mich.

"Trends in Automotive Design," Gilbert Way, Chrysler Corp., Detroit, Mich.

Friday, May 15

Morning Session

Round table discussion by field men on "Operating Kinks." A prize contest in which nine cash awards will be made for most valuable and practical ideas.

Afternoon Session

Address: "Who Pays the Taxes," Warren C. Platt, National Petroleum News, Cleveland, Ohio.

"The Spectacular Side of Hydrocarbons," Dr. Sidney Born, University of Tulsa, Tulsa, Okla.

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Interior of Pacific Imperial Dri-Ice Co.'s dry ice plant, Niland, Calif.

Stream Pollution Hazards Minimized by Improved Salt Water Disposal

By HAROLD K. IHRIG

Salt water disposal! Those three words call to mind one of the major problems now confronting oil producers. Since the first oil well was drilled these men who make up the production departments of the various companies have at times been confronted with similar problems, the magnitude of which at times made their solution appear to be hopeless, but those problems were always solved, and to good advantage.

While it has been the practice in the past years to dispose of salt water by dumping into the natural drainage, there is now a concerted, honest endeavor on the part of the industry to find other methods of disposal. The petroleum industry has been fully aware of the existence of the problem and has already spent huge sums to avoid damage.

The problem is present in every field where water is produced with the oil but of course the actual damage likely to be done will vary with the relative value of the land for other uses and the degree of water contamination. In those states where farm land values are relatively high the problem is most aggravating.

Ordinarily an oil-producing structure cannot be drained without producing large quantities of salt water with the oil. The percentage of water to oil varies from a small amount to such figures as 100 bbls. of water per barrel of oil. When a field is new the oil is usually produced with little or no water, but as depletion of the field progresses large quantities of water must be produced to obtain a commercially profitable quantity of oil. It is apparent, therefore, that unless large quantities of oil are to be left in the ground, an enormous volume of salt water must be produced and disposed of. The backbone of the oil industry is not the flush production from a few new fields but the relatively small amount of oil being daily produced from each of the 275,000 pumping or so-called stripper wells in the old fields, practically all of which yield water along with the oil.

An example of a field producing great quantities of oil and in so doing was forced to produce a like quantity of salt water is that known as the Greater Seminole area, in Oklahoma, which by the middle of this year will have produced in excess of $1,000,000,000 worth of oil. Had there existed statutes prohibiting the use of the natural drainage as means of disposing of the large volume of salt water produced in this field the amount of oil recovered would have been reduced to a very small part of what will be the ultimate recovery. That field is now 10 years old. Producers in this field have paid millions to the state in the form of taxes, like amounts to the citizens in the form of royalties, interest and dividends and has been such a large factor in the rapid development of that part of the state that the real value of the field cannot be calculated. Thousands of laborers are employed by oil companies in the area, the monthly payroll averaging $630,865.

There has been no general method of salt water disposal worked out up to the present time. Each field is a separate and distinct problem. There are, however, a large number of fields now operating wherein the producing companies have been for some time past

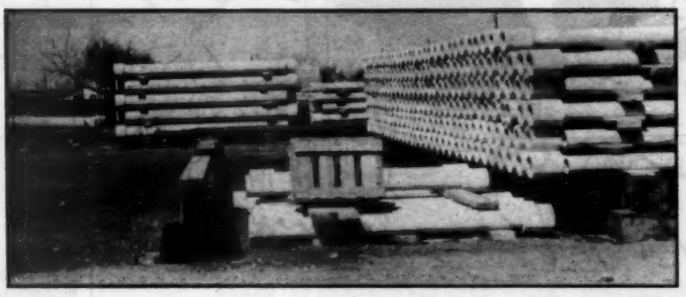


Fig. 3—Cement pipe to be used for combating salt water corrosion

Fig. 1—View of salt water disposal well

been disposing of all the salt water being produced, by means other than dumping into streams or onto the surface of the ground comprising the water shed of flowing streams.

The writer was impressed, during a recent visit to the various fields of the state of Kansas, by the progress that had been made in the salt water disposal work there. In certain areas where the salt water produced was formerly put into surface drainage there is now no salt water apparent, notwithstanding the fact that large quantities of it is being produced. Input wells have been drilled to either non-producing formations or on the low side of producing structures and the salt water is being returned to these formations in great quantities. There are approximately 70 separate disposal projects in operation in the state at the present time which are disposing of salt water at a rate in excess of 25,000,000 bbls. annually. Other like projects are being added from time to time which will take care of an additional volume of water.

Successfully returning salt water to underground formations entails considerable study and expense. Vast sums of money have been expended by the leading oil companies in an effort to learn the proper procedure to follow in returning mineralized waters to porous formations in such condition as to avoid clogging the sand pores. These investments in the analyses of salt waters, geological formations and conditions, treating and pumping equipment have run into millions of dollars, with many more yet to be expended in the research connected with this problem.

There are certain areas in Kansas where the subsurface horizons that are nonproductive, but are still of high enough porosity to permit the injection of salt water into them. Most of the operators in those areas are disposing of the water in this manner. In order to make any disposal project 100 per cent successful it is necessary that every operator producing salt water within the confines of the water shed of the pool enter into the program, be it one in which the companies are disposing of their own water themselves or have joined forces and organized a community disposal program.

Several companies have conducted well planned and successful educational programs for the benefit of their field personnel in an effort to impress upon these men the importance of keeping the properties operating in a clean and orderly manner, and to also impress upon them the results of pollution by allowing salt water or oil to be discharged upon the surface of the lease where it might find its way to the drainage system and cause damage. The effect of these "clean up" programs has been most gratifying. Men in the field are now taking an active interest in stopping or preventing the escape of any waste that might cause pollution, and are doing so with a certain amount of pride in their work.

Figure 1 is a view of a salt water disposal well in the state of Kansas showing salt water line from treating or settling tanks connected into the top of the casing in the well. The casing in this well is cemented from top to bottom to protect sands carrying fresh water through which the well was drilled. This well is taking water without the aid of pumps, as the formation to which it is being delivered carries no water and the input water in falling down the casing creates a vacuum which pulls

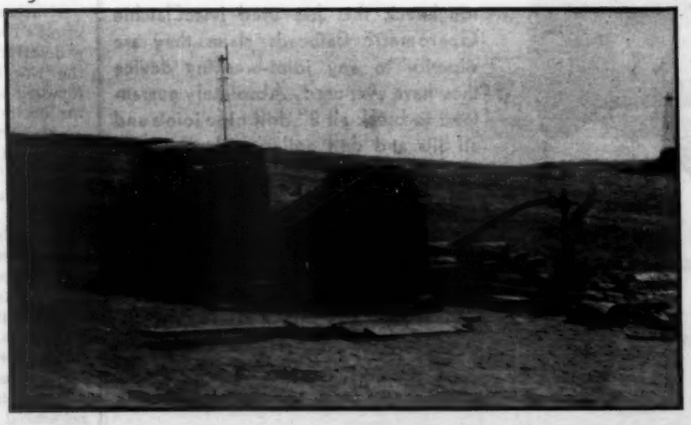
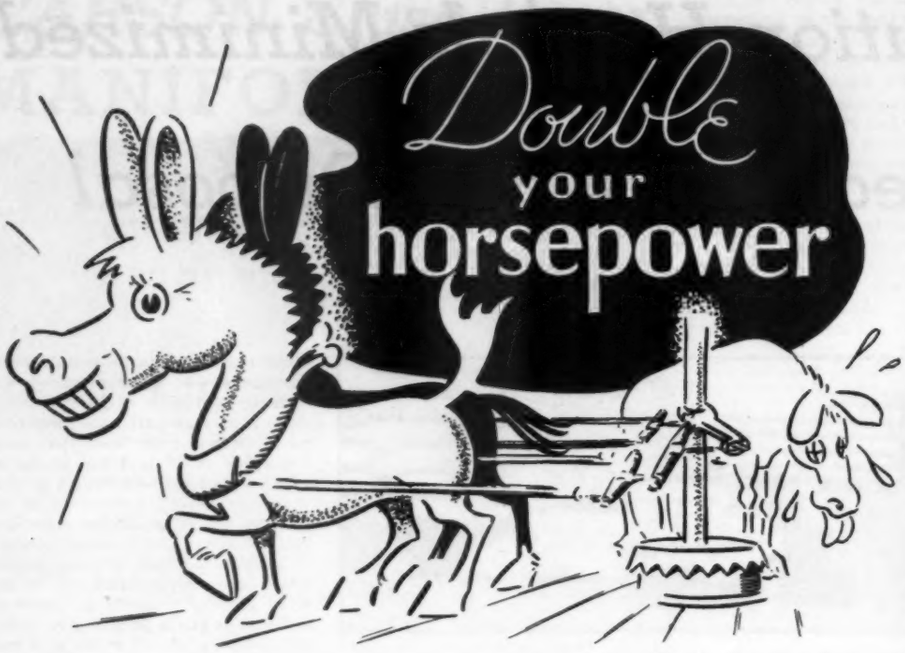


Fig. 2—Pumping unit used for forcing salt water into disposal well



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the water from the tank into the well. This one well is disposing of all the water produced on the lease, the water requiring no treatment whatever.

In contrast to the well shown in Figure 1 the well in Figure 2 is cased to a depth of about 500 feet and is bottomed in a sand of low porosity, necessistating pumping the water into the well. The pump unit shown is a test unit and will be replaced by a different type pumping unit in the near future. This well will take water at the rate of 187 bbls. per hour at a pressure of 250 pounds at the surface, which in the course of a year should dispose of over 1,500,000 bbls. of water, should water production on the leases surrounding the well reach that figure. The field in which this well is located also has several other disposal wells of the same capacity.

In order to combat corrosion in lines handling salt water one major company operating in the

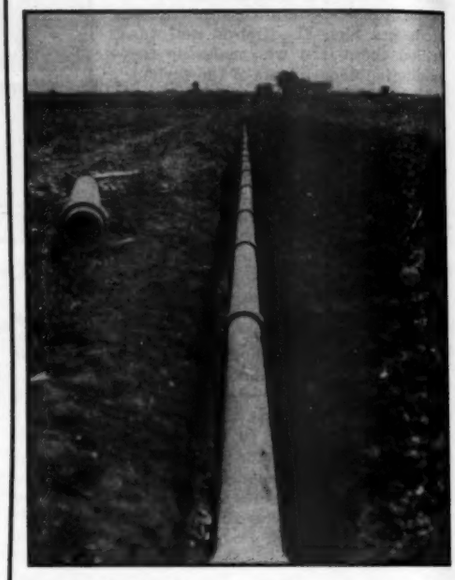

Fig. 4—Typical cement-asbestos water line

Kansas fields is to install a gathering system composed of pipe made of cement. The pipe shown in Figure 3 is stored in a warehouse yard prior to installation in the large disposal project this company is to start construction on in the immediate future. The pipe in the foreground is 4-inch and the two racks in the background are 6-inch and 10-inch. This pipe will serve as the gathering system for a gravity disposal system of an estimated 9,000 bbls. per day capacity. Only one disposal well is to be used at the start of the project, but should it prove unable to handle the volume of water produced another well will be drilled to share the load, the water being put into the Siliceous lime.

Individual Driver, Pedestrian Key to Safe Driving Problem

National mobilization of safety and allied groups to educate the individual driver and pedestrian is urged in the "Ethyl News," organ of the Ethyl Gasoline Corp., as the biggest single forward step which can be taken in reducing motor accidents.

"Legislation, better engineering of highways and strict law enforcement are highly essential to increased safety, but the most effective progress will be through individual education about safety among as many people and from as many sources as possible," declares a report of a survey by Bird Rees, New York statistician. "America is aroused by the appalling toll on the highways, but sound remedial measures must recognize that the problem is largely individual. Responsibility for 380,000 deaths in this country in the past 14 years, or 50 per cent more than the total number of Americans who were killed or died of wounds in all wars in which the nation has participated, can be traced primarily to individual carelessness."

That the mechanical condition of motor cars

had little influence on accidents in 1935 is evidenced by an analysis of over 1,000,000 cars and trucks that were in accidents, since 95 per cent were shown to be "apparently in good condition." Of the motor vehicles in accidents, 80.4 per cent were passenger cars, 13 per cent commercial trucks, 3.7 per cent taxis, and 1.2 per cent busses. In fatal accidents, 77 per cent were passenger cars and 18 per cent commercial cars.

"As to the location of accidents, we find the greatest number of accidents—36 per cent—as well as persons injured—38 per cent—occurred at street intersections," the report continues. "But fatal accidents occur in the greatest numbers—38 per cent—on open highways, and 'between intersections' ranks second with 24 per cent.

"During the normal hours of darkness, 6 p.m. to 6 a.m., about 60 per cent of the fatalities took place, and about 14 per cent came between 1 a.m. and 6 a.m. Each hour from 6 p.m. to 10 p.m. averages 7.5 per cent of these fatalities. Exceeding the speed limit is the outstanding cause of death. It requires 50 yards of travel to stop from a speed of 50 miles per hour.

"Most of the fatal accidents occur on Sundays and Saturdays while the driver is going 'straight ahead,' and 94 per cent happen while male drivers over 25 years of age are at the wheel.

Injuries From Collisions

"The greatest number of accidents—45 per cent—and the greatest number of injuries from any one cause—50 per cent—were due to collisions between automobiles. The greatest number of deaths from any one classification—16,030, or 44 per cent—were the result of motorists striking pedestrians.

"'Did not have the right of way' caused the largest number of accidents—26 per cent—and the greatest number of persons injured—27.2 per cent. 'Exceeding the speed limit' caused the greatest number of deaths—7,240, or 31 per cent, and was second in both the number of accidents—23 per cent—and persons injured—23 per cent. 'On the wrong side of the road' resulted in the second largest number of deaths—17 per cent.

"'Pedestrians crossing between intersections' leads in the number of accidents—27 per cent; of persons killed—28 per cent; and of persons injured—27 per cent. 'Children playing in the street' was second in the number of accidents—16 per cent—and of those injured, and fourth in the number of those killed.

"Last year there were 826,000 automobile accidents resulting in 36,100 persons killed and 895,280 injured. This makes the past two years' daily average 100 killed and 2,265 injured. The annual economic loss is estimated at $1,500,000,000, which is nearly equal to the total annual wholesale value of motor car production.

"Last year 'sudden death' came to more pedestrians—44 per cent in automobile accidents—than to any other group. Of these pedestrians, about 23 per cent were under 15 years of age, and 22 per cent were over 65 years of age. The 20,000 deaths to others than pedestrians were due to collisions of many kinds—a shameful record indeed, but hardly comparable to the rampant running down of innocent pedestrians, of whom 23 per cent were children.

"Accidents resulting in persons killed and injured increased last year at about the same rate as car registration. The fotal registration of all motor vehicles was 26,000,000, of which nearly 22,500,000 were passenger cars. That figure represents 71 per cent of the world's motor cars."

Effort to check the continuous annual increase in killings, permanent disabilities, painful injuries, and the useless destruction of property is becoming more widespread and more aggressive, the survey finds.

New Compressor Plants

LOS ANGELES, Calif., Apr. 20.—Associated Oil Co. has started work on two new compressor plants in the Ventura Avenue field and plans call for completion of work on or before July 1. These new units, which will be high pressure gas lift compressor plants, are required because of gas depletion in the upper zones which makes it obligatory for operators to put a number of producing wells on gas lift.

The wise way

When competition begins to worry a refiner here are three things he can do about it:

1. He can sit still and wait for better times while more progressive refiners drain away his gallonage.

2. He can cut prices and so hold his gallonage (or some of it) while his profits dwindle and vanish.

3. He can call in Parsons.

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PROBLEMS FROM READERS

Edited by T. F. Smiley

Many Advantages Are Likely to Be Gained by Water-Flooding

In The Oil and Gas Journal issue of April 2, 1936, you told about the use of the water-flooding system of recovering oil in answer to a question by G. R. E. I wish you would tell me just what benefits may be expected by adopting this system. I know of course that this method recovers a good deal of the oil left in the sand by other methods of recovery, but I would like to know more detail about it.—L. S. D.

Many advantages are possible to the operator who is successful in a water-flooding project in a field no longer profitable by ordinary production methods. The possibilities of the method are summed up as follows by George H. Fancher and Kenneth B. Barnes in a paper prepared jointly by them:

1. It may produce oil that could not be recovered by natural methods of production. Usually this is the case with oil sands which lack a natural water drive. Leases are known that would not have recovered 1,000 bbls. an acre over a long period of time, as indicated by production decline curves, but that have obtained 4,000 bbls. an acre under properly planned water-floods. One cause for this result is that energy, through the water drive, can be applied in sufficient amount and at selected points and to areas to move to the wells some of the oil contained in the sands that lack energy. This energy greatly supplements the only important driving force, the gas pressure, previously existing for producing the crude oil. The gas pressure in sands of this type, especially if they have produced for some time, is usually so small as to be almost negligible, and consequently wells produce at a small rate.

2. Successful water flooding will recover the dead or unsaturated crude commonly present in stripper fields in a short time. For example, a lease may be considered that is at or approaching its economic limit under present conditions. The lease might be made to produce further by one of three methods with the following results: (a) Pumping, 25 years, yield: 1,500 bbls. per acre. (b) Repressuring, 10 years, yield: 2,000 bbls. per acre. (c) Water flooding, 2 years, yield: 3,000 bbls. per acre. Method (a) is obviously impractical, (b) and (c) can be made profitable. The saving in interest, depreciation, maintenance and operating charges, and ad valorem taxes made possible by use of method (c) is evident.

3. The oil saturation of the sand, if sufficiently high, is reduced to a fairly low figure. This, of course, is only another way of stating that the recovery is efficient. The process is generally thought to remove from 35 to 45 per cent of the oil contained in sand of suitable physical properties at the start of flooding. In tight sands it is known that water will remove more oil than will a gas drive, although in loose sands with large capillaries the gas drive may be considerably better if the original oil saturation is low.

4. Water-flooding offers a positive control of oil production. While it is not desirable to simply shut down the water to input wells to decrease production, flood projects are developed in blocks the total life of which is comparatively short. By planning to develop new blocks in accordance with prevailing economic circumstances, and in necessity restricting the input of water, a control is possible that is not much more difficult than that for ordinary pumping. In fact, one operator has compared it to turning on and off a spigot.

5. The maintenance and operation of water-flood leases, after sand studies and development plans are made, is easy and simple. Labor charges to the operation are low. High pressures are obtained more easily and cheaply in water flooding than by gas repressuring.

6. Water flooding based upon competent core analyses and economic studies becomes simply a mining operation capable of yielding a desirable return upon any given investment.

Static Electricity as a Hazard in Pulling Rods or Tubing

Perhaps you can give me some information concerning fire hazards while pulling rods or tubing. I am told that static electricity is generated in pulling jobs, and I am wondering if the truck used should be grounded to guard positively against fire, particularly if the derrick is a wooden one.—E. E. E.

Static electricity is a phenomenon which it is rather difficult to explain. In some details even authorities on the subject are not in complete agreement. Some assert static electricity is built up by friction. Dr. Elihu Thompson contends it can be built up without friction. It is fairly safe to say, however, that static electricity in the oil industry is created by friction. Most authorities agree that what really occurs is a separation of positive and negative parts of electricity, which allows building up of one or the other until enough potential is reached to cause a spark to jump across an air gap.

There are two things to do by way of remedy, namely, prevent the separation or provide an easy means of rejoining. It would seem that the simplest way to meet the situation would be to ground the danger points and thus make it unnecessary to provide any means for rejoining.

WHY THEY CALLED IT *Ouachita*

Before the West was settled Choctaw Indians, then established east of the Mississippi, used to cross that river every year and hunt buffalo along a stream in Arkansas and Louisiana which they called the Owa Chito. ("Owa" Choctaw for hunt and "chito" for big.) The French later turned this into Ouachita, by which the stream and the mountains extending from Atoka, Okla., to Little Rock, Ark., are now known. When the buffalo became scarce the Choctaws found more along a stream in southern Oklahoma to which they gave the same designation, Owa Chito. The English later Anglicized this to Washita. Petroleum geologists have found the Ouachita Mountains to be a southwest extension of the southern Appalachian system, along the flanks of which the first oil wells in Pennsylvania were found. The Fitts pool, Oklahoma, is on the north flank of the Ouachitas.

What Type of Power Is Best for Use in Driving Gas-Lift Compressor?

We are considering installing gas-lift at some of our wells and I would like to have some information on what type of power should be used to drive the compressor. Can steam engines be used to advantage? I would like to know something about the relative merits of gas engines and electric motors. I would appreciate it too if you could give me some suggestions concerning what size unit has been found best in practical operations.—T. S. G.

Generating the power for gas-lift operations and applying it properly present a subject for careful engineering consideration in order to avoid unnecessary outlay and to keep the expense of operation as low as possible without affecting efficiency. Compressors used in gas-lift work may utilize the steam engine, electric motor or an internal-combustion engine fueled by oil or gas.

Steam was used for operating compressors in gas-lift work in the early days, but experience showed it consumed too much fuel, according to S. F. Shaw in a discussion of this subject. Electric motors have been employed in small and large installations and possess the advantage that the capital outlay for the plant is low, and the time required for installing the plant is probably less than for any other type of plant. However, when the production declines to a low point, the cost of electric power becomes correspondingly higher. Oil engines can be employed, but their use has been limited, owing to the fact the cost of the engine is greater than that of a gas engine. Fuel gas is usually available at low cost at gas-lift compressor plants, thus making gas-engine drive the more convenient and less expensive to operate, and involving a lower installation cost. The trend in gas-lift work has been largely toward compressors direct-driven from gas engines.

Gas-lift plants are large or small, depending on the number of wells to be flowed from a single plant, on the pressure required, on the life of the wells, and on whether the wells are to be produced at their maximum capacity or on restricted production.

Choice of the size of the compressor units employed shows variety in opinion. The tendency toward the large units, that is, 165 to 230 horsepower, is pronounced in the manufacture of natural gasoline, and, looking at the operation strictly from a mechanical engineering point of view, it would seem the combination of gasoline plant and gas-lift plant would be a happy solution of the problem. The problem is not so simple, however, as this would seem to indicate, and much disappointment has resulted from the combination gasoline gas-lift arrangement in the Mid-Continent, due largely to the comparatively short life of the deep wells being operated in many of these fields.

For strictly gas-lift operations, the use of small compressor units, as well as large units, has been advocated. It is true the cost per horsepower installed is less for a large unit than for a small one, but in most cases there are other factors more than offsetting the small reduction in installation cost obtained by using large units. Flexibility in application of the unit and portability of the machinery to another site are important matters in the use of compressors for gas-lift work. Most wells quickly reach a peak in production, then begin to decline, and sometimes this decline is rapid, depending on the extent to which the productive capacity of the well is approached. After the well begins to decline it is desirable to begin movement of part of the plant to another site, thus making portability important.

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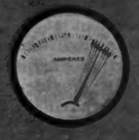
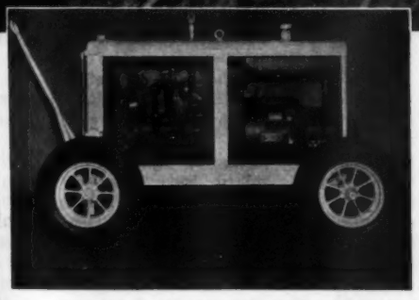
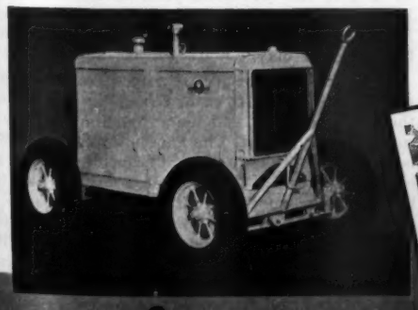


Many machines have closely approached a condition of arc stability, but now this New FlexArc machine completely masters the problem and gives you *absolute* steadiness. Current control is achieved mechanically. By means of a single preset dial the desired current is selected and the welder *automatically* gives the best combination of current and voltage for the job.



Open view of new 300-ampere Engine-driven Westinghouse FlexArc Welder. This design, the "Oil Field Special" is built specially for severe outdoor service. Note absence of meters, rheostat, exciter and reactor. These trouble-causing gadgets are eliminated, can never cause trouble on the job. Powerful Chrysler engine, same as used on dependable Dodge Trucks. High overall efficiency—due to elimination of current-consuming parts—substantially cuts welding costs.



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Four years ago Westinghouse engineers determined to make arc welding a still more useful tool of industry. Now, after four years' research and development, Westinghouse announces the first machine in history that has a really flexible, stable arc.

Draws Longest, Steadiest Arc—The arc of this new machine can be pulled to extreme lengths and will not go out. This means that for a satisfactory result less painstaking care is necessary on the part of the operator, and uniform, quality welds are assured under *all* circumstances.

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ASK FOR A DEMONSTRATION

Compare the new FlexArc with any other make. Test it. Study its performance curves and you will be convinced that it renders your present equipment obsolete.

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Distributed in the Oil Fields by:

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The New FlexArc Welder is warranted to give the user—
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QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph.D., Technical Editor

Original Solvent Refining Method Utilized Sulfur Dioxide

We have been much interested in the information you have furnished concerning the properties of the several solvents used in the refining of lubricating oil. Will you kindly tell us which was the first of these solvent processes and give a brief description?—W. G. S.

It appears that the first solvent to be used in petroleum refining was liquid sulfur dioxide. The process was invented by Lazar Edeleanu for the treatment of Rumanian kerosene, British Patent 11, 140, May 22, 1908.

The method is continuous. The essential steps are outlined here as given by Kalichersky and Stagner.

Sulfur dioxide is usually applied in kerosene treatment at 10° to 15° F., although for heavier oils, a high temperature may be more economical. In refining kerosene from asphalt crudes, the liquid sulfur dioxide dissolves the hydrocarbon compounds having a high ratio of carbon to hydrogen, as exemplified by aromatics and diolefins, and leaves undissolved the compounds richer in hydrogen, such as the aliphatic and naphthene hydrocarbons. Kerosene stock at 10° to 15° F. absorbs from 10 to 12 per cent by volume of liquid sulfur dioxide; but as more sulfur dioxide is added, two liquid layers are formed. The lower layer is sulfur dioxide and the dissolved hydrocarbons; the upper is primarily hydrocarbons with a relatively low percentage of dissolved sulfur dioxide. The oil from the upper layer has a lower specific gravity (higher Baume gravity) than the original stock, whereas the oil from the lower layer has a much higher specific gravity than the original stock. The quality of the refined kerosene is very similar to that produced by treatment with strong sulfuric acid. The change in gravity of the stock during treatment can be accepted as a fair measure of the improvement made in the burning quality by the treatment. Other corresponding changes in the finished product over the original stock are: higher ratio of hydrogen to carbon; higher percentage of saturated compounds; gravity-boiling point curve approaching the curve of a kerosene from a paraffin-base oil; lower sulfur and lower nitrogen contents; less color; less tendency to smoke in burning; less tendency to foul the wicks; etc. Lubricating oils treated with sulfur dioxide have a flatter viscosity curve and produce less sludge and acidity in use; transformer oils become more resistant to oxidation; turbine oils emulsify less readily; etc.

The sulfur dioxide process has been often described in the literature, the references mentioned here are simply examples.

References: Kalichevsky and Stagner, Chemical Refining of Petroleum, page 225. R. L. Brandt, Ind. Eng. Chem., 22, 218, 1930. O. P. Cottrell, The Oil and Gas Journal, Nov. 10, 1933, page 64.

Slop and Slop-Ends May Include Distillates and Residues

We are at a loss as how to classify slop-ends because we have no reference books which define the term. Will you kindly explain this, especially as it applies to slop-wax?—A.O.V.

The several residues and materials frequently produced in the refinery that are not in a satisfactory condition to be marketed, or to be included in a marketable product, may be termed "slop." It is the practice in all refineries to provide certain tanks to which may be run off-specification materials; such as gasoline that shows a faulty distilling range, especially a high endpoint, a contaminated oil or admixture of two or more products, and any product which must be reprocessed to obtain the required purification.

The slop tanks are usually a part of the departmental equipment, such as the light oils, lubricating oils, wax, pressure stills, and also general refinery slop Each of these may receive material that is suitable or rerunning within the department or transferred to the general refinery slop to be rerun with the crude oil.

Slop-wax has two meanings, the first being the same as has been described above for other products and the second a technical meaning. It sometimes happens that an apparently normal wax distillate will not behave when it reaches the sweaters; that is, it cannot be properly crystallized. This is usually due to still conditions, including not being sufficiently reduced, the presence of heavy viscous oil or too much amorphous wax. Slop wax is seldom rerun in the lubricating oil and wax department but is sent to the pressure still department to be included in the charging stock for conversion to gasoline.

A brief outline of the method for making paraffin wax may help to explain the reason why slop wax can seldom be reprocessed. The wax distillate is the fraction from the crude oil containing most of the wax. This is cooled and run through a filter press where the crude wax is separated from the larger part of the oil. This wax is purified by the sweating process. The pressed wax contains some oil which cannot be removed by the presses. The object of the sweating process is the removal of this oil and the separation of the low melting from the high melting point wax. The wax mass is caused to solidify on a screen, the temperature slowly raised and maintained for several hours, in the presence of steam, at a point slightly below the melting point. The oil with the low melting point waxes sweats out to flow away from the crystals of wax. This process may be repeated until the wax has reached the desired purity.

Viscous heavy oils and resins interfere with the sweating so the distillation of the lubricating oil and wax distillate must be conducted to avoid having these present. Also, the distillate must not contain excessive quantities of amorphous wax.

These requirements result in much material that has to be discarded as slop wax.

Slop ends are usually liquid, but may in the case of wax be semisolid.

SPECIFICATIONS

FEDERAL MOTOR FUEL V

General requirements: Highly volatile hydrocarbon liquid suitable for motor fuel.

Copper corrosion		negative
Distillation:	Pct. at °F.	Per cent evaporated is
Evap., min.	10	158 found by adding loss to
	50	257 the volume collected at
	90	356 each temp. specified.

Residue shall not exceed 2 per cent.

Sulfur, total, per cent	0.10
Vapor pressure, max.	10 lbs. at 100° F.

Use: Suitable for ambulances, fire engines, emergency vehicles, military and naval equipment, etc., under adverse conditions of starting and acceleration.

Note—With slight changes, chiefly the inclusion of octane number, this specification appears to be met by most of the better grades of gasoline distributed throughout the United States.

Reference: Federal Stand. Stock. Cat. VV-M-571. Methods—Part 2 Federal Specification VV-L-791.

Inspection of Fullers Earth by the Burning and Filtering Tests

Do you have the directions for a reliable method for testing filtering earths? What I mean is a laboratory method which may be followed for comparing new earths and also for determining the color removing capacity of used earths?—A. R. S.

Laboratory apparatus and a method for inspecting filtering earths were described by K. W. Nichols in The Oil and Gas Journal, July 18, 1935, page 38. The extract following is from this reference.

The apparatus includes: Percolating filters 2" x 13" or 2" x 18" with water jackets, water jacketed constant head containers large enough to hold enough oil for a test. The filters are made from 2-inch pipe and fitted at the bottom with pet cocks or needle valves. A single-hearth Herreshoff furnace having a diameter of 13 inches and 5 inches deep. This is heated from a gas burner, so arranged that the flame plays 2 inches over the clay bed. Two rabble arms are arranged to stir the clay.

When testing 30-60 Florida earth a bed 12.5 to 13 inches is made in the filter, which requires 310 to 350 grams of No. 1 earth. A reburned clay may weigh, in the same volume, 500 grams or more. New clay is burned in the furnace at 800° F. for 15 minutes. Stored clay may be freed from moisture by heating at 220° F. for at least one hour. Hot earth is cooled to 150° F. before packing in the filter. The oil in the feed tank is brought to 120° F. before opening the valve to the filter. The outlet at the bottom of the filter is left open until the first drop of oil appears; then it is closed and the filter "soaked" for 20 minutes. When testing cylinder stock, a solution 60 per cent Stoddard Solvent and 40 per cent of the oil is made. This is run, after soaking, at the rate of 5 cc. per minute. The yields are ordinarily determined when the total filtrate reaches some designated color, such as either 4, 4.5 or 5 color A.S.T.M. No. 1 clays and laboratory reburns are run in equal volumes and the efficiencies are reported by weight.

Plant reburns are tested in volumes equal to that of a No. 1 clay and the efficiency by volume is reported. The conditions of testing, that is, the diameter and depth of the clay bed, the rate of flow, and the temperature should be so selected as to give the maximum yield in gallons/ton. A heavy, probably less porous, clay must be used in a deeper bed or the rate must be slower than for a lighter clay.

A plot of the respective yields from two samples up to the fifteenth reburning shows that their comparative efficiency remained nearly a constant throughout. The curves do not cross. For both samples the average efficiencies of the reburns were about 12 per cent above that of the initial. This superiority of the reburns to No. 1 clay tempered at 800° F. for 15 minutes has come to be expected and is possibly due to the formation of a small amount of decolorizing carbon from the organic matter in the clay. The best temperatures for the initial burning lie between 700 and 1000° F. and 15 minutes is the most favorable time. A temperature of 1,000° F. and 45 minutes time are optimal for reburning.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired postage should be enclosed.

Kansas Developments

MORE WILDCAT TESTS START IN RUSSELL, ELLIS COUNTIES

By
DAL DALRYMPLE

Several new wildcat tests that are of more than ordinary interest have been announced for Kansas, with work already starting at some of the new locations. The Lerado area of southwestern Reno County continued to hold interest of Kansas oil men, a fourth well in that sector proving to be a big producer. One of the most active drilling campaigns in the history of the state was under way, although most of the work of the past week was at routine stages. One recent survey showed that 456 operations were listed last week. These included 296 drilling wells, 96 derricks, 35 locations and 29 new oil producers.

In the Lerado area, Shell Petroleum Corp. No. 1 Nunemaker, NW¼ section 11-26-9w, flowed 2,970 bbls. of oil in six hours, an average of 495 bbls. an hour. Production was from Viola lime, total depth 4,146 feet. The four producing wells in the area, all drilled by the Shell company, have a total potential of about 33,000 bbls. daily. The area has not been defined in any direction, but indications that the first limitation might be on the south were seen in the showing at the George P. Dickey No. 1 Shepherd, NE NE NW section 22-26-9w, wildcat a mile south of production. After topping Viola lime at 4,146 feet and drilling to 4,161 feet, the well was showing considerable water. Bailing failed to lower the water level. The well had a show of oil with water at 4,156 feet. The well still is given a chance for production when deepened.

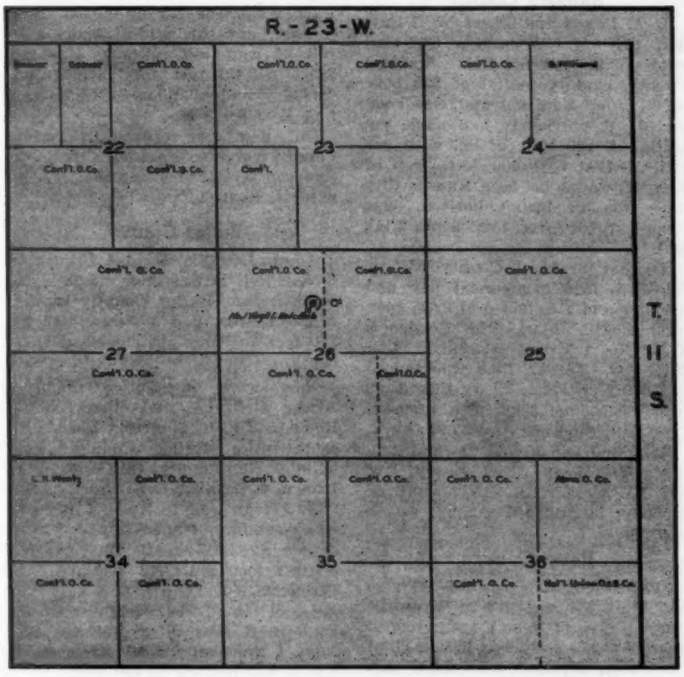
Western Kansas Oil & Refining Co. was moving in material preparatory to drilling a wildcat in north central Russell County, between Luray and Russell. It is the No. 1 McAllister, NE SE SE section 9-12-13w, on a 2,000-acre block assembled by Winkler & Koch. Location for this interesting wildcat test was made after a subsurface study of the geological features of the region by Chester Thomas. In 1924, the Prairie Oil & Gas Co. drilled a well in section 16-12-13w, 1¼ miles southwest of the new test, and although it had a 40-bbl show of oil, it was abandoned. Another dry hole in section 33-11-13w 2 miles north of No. 1 McAllister, had a 10-bbl. show of oil. The No. 1 McAllister is on a topographical high as well as a subsurface high.

Vickers Petroleum Co. is to drill a wildcat test in section 22-14-19w, about 5 miles southwest of Hays, in Ellis County, it was reported, although exact location had not been made. It is on a block owned by Thurman Hill, Kansas lawyer and former member of the corporation commission. John R. Lebosquet, Wichita operator, is reported planning a wildcat test on the Penney-Wann ranch, in southwestern Ellis County, 9 miles west of the Ruder pool. Tentative location was said to be SE cor. section 13-15-20w. Several other wildcats in various sections of Ellis County are drilling, with additional tests projected.

Russell County

Stanolind Oil & Gas Co. No. 1 Rein, NW cor. section 25-14-14w, in Russell County, made potential of 585 bbls. of oil and was completed. Oswald lime was topped at 2,928 feet, total depth 3,008 feet. It was treated with 5,000 gallons of acid. Gulf Oil Corp. No. 3 Ehrlich, NW SW NW section 1-14-15w, topped Anhydrite at 915 feet, Oswald lime 3,045 feet, total depth 3,095 feet. After acidizing, it made potential of 642 bbls. of oil, cutting 1 per cent water, and was completed. Empire Oil & Refining Co. No. 4 Johnson, NE SE NE section 2-14-15w, made potential of 1,172 bbls. of oil and was completed. Top of Anhydrite was 927 feet, Oswald lime 3,056 feet, Gorham sand 3,306-09 feet, total depth.

Lario Oil & Gas Co. and Texas Co. No. 3 Boxberger, C E half NW NW section 24-14-15w, had Siliceous lime at 3,222-26 feet, total depth, made potential of 906 bbls. of oil and was completed. Anhydrite was topped at 850 feet, Oswald lime 3,012 feet. Gulf Oil Corp. No. 1 Hall, SW NW SE section 36-14-15w, made potential of 382 bbls. of oil, with 17 bbls. of water, and was completed. Anhydrite was topped at 805 feet, Oswald lime 2,980 feet, Gorham sand 3,218 feet, total depth 3,225 feet. It was plugged back to 3,009 feet to complete. Phillips Petroleum Co. and Glimac Oil Co. No. 1 Down, NE SE NW section 30-13-14w, topped Siliceous lime at 3,296 feet, corrected, had a hole full of water at 3,318-20 feet, total depth, and was dry and abandoned. Top of Anhydrite was 812 feet; Oswald lime 3,025 feet.



A new pool in the Wakeeney sector of Trego County, Kansas, has been opened by Continental Oil Co. No. 1 Holcomb

(Mid-Continent Map Co., Wichita, Kans.)

New work in Russell County included the following: Central Petroleum Co. No. 2 Rusch "B," NE NE SW section 19-12-15w, rig; Bridgeport Machine Co. No. 1 Mills, SW NE SE section 33-13-15w, moving in material; Gulf Oil Corp. No. 4 Ehrlich, SW NW NW section 1-14-15w, building rig; Empire Oil & Refining Co. No. 6 Johnson, NW SE NE section 2-14-15w, moving in material; Southern Oil Co. No. 2 Berrick, SW NE NE section 6-15-13w, cellar; Coralena Oil Co. No. 1 G. M. Sellens, SW SE SW section 20-15-13w, rig.

Smoky Hill Oil Corp. No. 5 Miller, SE SE SW section 30-14-13w, was bottomed at 2,955 feet and after acidizing was producing at the rate of 35 bbls. of oil an hour. Anhydrite was topped at 668 feet, Topeka lime 2,590 feet, Oswald 2,860 feet, and pay was had at 2,890-96 feet. Southern Oil Co. No. 1 Berrick, NW NE NE section 6-15-13w, total depth 2,926 feet, was acidized and pumped and flowed 503 bbls. of oil in 18 hours. Sam Murphy and others No. 1 Enschutz & Schaffer, SW cor. section 10-15-13w, wildcat, made potential of 230 bbls. of oil, down four hours of the test. Total depth was 3,327 feet. Siliceous lime was topped at 3,311 feet. Signal Oil Co. No. 3 Sellens, SW SE NW section 26-15-13w, pumped 157 bbls. of oil in 12 hours after treating with 4,000 gallons of acid. It was bottomed at 3,090 feet.

Estimated Production

Estimated daily average production in Kansas for the week ending April 18 and for the preceding week is as follows:

	Barrels	
	Apr. 18	Apr. 11
Oxford City	7,825	8,000
Burrton	13,600	14,050
Ritz-Canton	6,725	6,825
Hollow-Nikkel	4,625	4,500
Voshell	3,325	3,300
Ellsworth County:		
Lorraine-So. Lorraine	7,792	7,747
Other pools	1,655	1,673
Rice-Barton Counties:		
Chase	9,106	9,687
Raymond	3,527	3,114
Silica	9,181	6,705
Keesling	2,616	2,584
Miscellaneous Rice	3,039	3,408
Miscellaneous Barton	2,073	2,366
Russell County:		
Fairport	2,662	3,512
Gorham	3,265	2,997
Russell	3,341	2,987
Other pools	6,552	8,799
Sedgwick County:		
Valley Center	1,408	1,384
Greenwich	1,423	1,376
Robbins	1,506	1,580
Eastborough	842	852
Other pools	512	432
Ellis County	1,781	1,242
Kingman County	678	940
Stafford County	1,954	1,495
Greenwood County	8,750	8,950
Butler County	18,500	18,760
Other fields	.....	19,300
Total Kansas	147,750	148,550

Ellis County

Margay Oil Co. No. 1 Bemis "B," SW cor. section 15-11s-17w, in northern Ellis County, made potential of 1,353 bbls. of oil in 24 hours and was completed. Production was from Siliceous lime at 3,380-82 feet, total depth. Anhydrite was topped at 1,083 feet, Topeka lime 2,795 feet, Oswald lime 3,075 feet.

A. H. Gibson and others No. 4 Ruder, NE SW SE section 8-15-18w, in southern Ellis County, was a rotary rig. Mutual Oil Co. No. 1-A Johnson, NW SW NE section 9-13-19w, an old well, was rigging up to deepen.

Rice County

Continental Oil Co. and others No. 1 B. B. Ainsworth, SW SW SE section 24-18-8w, in northern Rice County, was acidized with 4,000 gallons and made potential of 1,395 bbls. of oil. Kansas City lime was topped at 2,785 feet, Siliceous lime 3,106 feet, and the well was completed at 3,180 feet, total depth.

Continental Oil Co. and Empire Oil

& Refining Co. No. 1 Nickel Community, NE SW SW section 13-18-8w, wildcat which extends the producing area 1¼ miles north, was acidized and made potential of 1,428 bbls. of oil, completed. Siliceous lime was topped at 3,210 feet, total depth 3,216 feet.

Hipple & Rogers No. 6 Rainet, C E half SW SE section 3-21-6w, in southeastern Rice County, was dry and abandoned after plugging back to 3,404 feet from 3,722 feet, total depth. Chat was topped at 3,371 feet. It had a hole full of water at 3,700-22 feet.

Continental Oil Co. No. 3 Foote, NE NW SE section 7-20-9w, was acidized with 4,000 gallons, made potential of 301 bbls. of oil and was completed. Siliceous lime was topped at 3,270 feet, total depth 3,298 feet. Skelly Oil Co. No. 1 Sharpe, NW cor. section 8-20-9w, topped Siliceous lime at 3,246 feet and was bottomed at 3,272 feet. After acidizing with 2,000 gallons, it made potential of 984 bbls. of oil, cutting 2 per cent basic sediment, and was completed. J. H. Tatlock No. 4 Berscheit, NW SW NW section 6-20-10w, made potential of 1,917 bbls. after acidizing with 1,100 gallons and was completed at 3,279 feet, total depth. Production was from Siliceous lime, topped at 3,270 feet.

Vernon Oil & Gas Co. and Cusco Oil Co. No. 1 Boldt, NW SW NW section 10-19-10w, wildcat, old well drilled deeper, had a hole full of water at 3,388-92 feet and was dry and abandoned at 3,398 feet. total depth.

Joe Aylward and others No. 1 Oberle, SE SE SW section 19-18-10w, wildcat, was dry and abandoned with a hole full of water at 3,400-02 feet, total depth. Siliceous lime was topped at 3,325 feet.

New work in Rice County follows: Gulf Oil Corp. No. 6 Stoltz, SW SW NW section 32-19-10w, building rotary rig; Stanolind Oil & Gas Co. No. 5 Mitchell, NE NW SW section 32-19-10w, cellar; Hartman & Blair and others No. 1 Schartz, NE SE SE section 33-19-10w, rig; Gulf Oil Corp. No. 1 Schubert, SE SW SE section 9-20-10w, rotary rig; Empire Oil & Refining Co. No. 3 Burns, SW cor. section 15-20-10w, cellar; Gulf Oil Corp. No. 5 Coffman, SW cor, section 5-20-9w, moving in material; Empire Oil & Refining Co. No. 12 Proffitt, SE cor. section 6-20-9w, location; Sinclair Prairie Oil Co. No. 5 Sharp, NE cor. section 7-20-9w, rotary rig; Gulf Oil Corp. No. 4 Kessling, NE SW SW section 10-20-9w, rigging up rotary.

Barton County

Magnolia Petroleum Co. No. 6 Steckel, NW NW NE section 1-20-11w, in the Barton County sector of the Silica area, was bottomed at 3,286 feet, made potential of 1,245 bbls. of oil and was completed. Siliceous lime was topped at 3,271 feet. Mid-Continent Petroleum Corp. No. 4 Matzek, SW SW SE section 25-19-11w, made potential of 1,460 bbls. of oil and was completed. It topped Siliceous lime at 3,278 feet and was bottomed at 3,298 feet. Continental Oil Co. No. 6 Risse, NE SE SE section 36-19-11w, topped Siliceous lime at 3,266 feet, drilled to 3,273 feet, total depth, and was acidized. It made potential of 1,986 bbls. of oil and was completed.

Hilligoss and others No. 1 Schmidt, NE cor. section 27-19-11w, wildcat, had dry Siliceous lime at 3,485-90 feet, total depth, and was abandoned. Top of anhydrite was 547 feet, Topeka lime 2,650 feet, Kansas City lime 3,052 feet.

Texas Co. No. 1 Moran, SE SE SW section 25-17-11w, in the new Bloomer pool, made potential of 1,223 bbls. in 18 hours and was completed at 3,285 feet, total depth. Production was from Siliceous lime, topped at 3,280 feet.

New operations in Barton County: Continental Oil Co. No. 10 Risse, SE NW SE section 36-19-11w, building rotary rig; same operators No. 11 Risse, SW NE SE section 36-19-11w, building rotary rig; Magnolia Petroleum Co. No. 4 Meda Steckel, SE SE NW section 1-20-11w, spudding; G. H. Rose and W. H. Lant No. 1 Redetzke, wildcat, NE NW NW section 10-16-11w, moving in material; Bradley Oil Co. No. 1 Peoples State Bank, SW SE NE section 29-18-11w, location.

C. L. Price and others No. 1 Ehrlich, NW NW SE section 10-16-13w, an old wildcat in northern Barton County, being deepened, was drilling at 3,420 feet. Old total depth was 3,361 feet.

Stafford County

L. A. Farris and others No. 1 Snyder, SE SE NW section 3-21-11w, wildcat in northeastern Stafford County, made potential of 390 bbls. of oil after acidizing and was completed. It previously had made potential of 226 bbls. of oil, with gas estimated at 5,000,000 feet. Top of Anhydrite was 493 feet, Kansas City lime, the producing horizon, was topped at 3,070 feet, total depth 3,111 feet.

Another Stafford County wildcat failed to find commercial pay and was dry and abandoned at 3,677 feet, total depth. It was the Kessler & Their No. 1 Evens, NE cor. section 30-21-11w. Topeka lime was topped at 2,630 feet, Kansas City lime 3,165 feet, Viola lime 3,525 feet, Simpson 3,580 feet, Siliceous lime 3,607 feet.

Stanolind Oil & Gas Co. and Amerada Petroleum No. 1 Elwell, SW SW NE section 23-24-13w, south of St. John in Stafford County, was a location.

Reno County

Shell Petroleum Corp. No. 1 Welch "A," C SE SW section 9-24-4w, in the Burrton area of Reno County, topped Chat at 3,289 feet, was bottomed at 3,410 feet, acidized with 3,000 gallons and produced 890 bbls. of oil and 312 bbls. of water on potential test, completed. Same operator's No. 1 Seedle, C SE NW section 16-24-4w, made potential of 1,433 bbls. of oil, with 396 bbls. of water, and was completed. Production was from Chat topped at 3,292 feet, total depth 3,388 feet. Texas Co. No. 3 Collins, SW NW SE section 17-24-4w, made potential of 508 bbls. of oil from Chat topped at 3,301 feet, and was completed after acidizing. Total depth was 3,373 feet.

Shell Petroleum Corp. No. 2 Flory, C SW SE section 9-24-4w, was moving in material for a new Burrton test. Texas Co. No. 5 Collins, SE NE SE section 17-24-4w, was a rotary rig.

Marion County

Phillips Petroleum Co. No. 44 Townsend, SE cor. section 5-22-4, in southern Marion County, was acidized with 1,000 gallons and on potential test produced 135 bbls. of oil and 1,442 bbls. of water, completed. Hunton lime, the producing formation, was topped at 2,476 feet.

George Minor and others No. 1 Robinson, C NE NW section 15-20-5, in eastern Marion County, was rigging up machine.

Sedgwick County

Shell Petroleum Corp. No. 4 Lygrisse "A," SE SE NE section 15-26-2, an old well deepened, topped Simpson formation at 3,220 feet, had Siliceous lime at 3,304-08 feet, total depth, and was plugged back to Simpson. It made potential of 114 bbls. of oil in 24 hours and was completed.

Cowley County

Earl Carey No. 1 David, NW NW NE section 2-31-4, in northwestern Cowley County, made potential of 143 bbls. of oil and was completed. Top of Kansas City lime was 2,340 feet, Stalnaker sand, the producing horizon, was topped at 2,975 feet, total depth 2,982 feet. Tom Palmer No. 1 V. O. David, NE SE SW section 35-30-4, made potential of 230 bbls. of oil after drilling to total depth of 2,969 feet and was completed. Stalnaker sand, the producing horizon, was topped at 2,948 feet. Earl Wakefield No. 1 Wilson, NW cor. section 4-32-3, wildcat, had a hole full of water in Siliceous lime at 3,383 to 3,403 feet, total depth, and was dry and abandoned. Chat was topped at 3,069 feet.

Only new work reported in Cowley County was the Trees Oil Co. No. 1 Simpson, C NE NW section 3-30-4, wildcat, location.

Butler County

Admiral Oil Co. No. 1-A Brown, C S half NE SW section 29-28-4, in southwestern Butler County, in the Augusta area, had a fishing job at 200 feet and was abandoned at that depth.

New work in Butler County: Armer & Brandt and others No. 1 Romp, SW SW NE section 15-28-7, in southeastern Butler County, was building rig. Admiral Oil Co. No. 2-A Brown, C S half NE SW section 29-28-4, a twin well to No. 1-A Brown, was cleaning out after setting 8-inch casing at 1,515 feet. Gas gauged 500,000 feet at 1,440 feet. G. B. Finch No. 1-A Liggett, C S half NE NE section 7-23-4, had spudded. Western Kansas Oil & Refining Co. No. 2-A Furman, NE SW SW section 8-23-4, was drilling at 430 feet.

Greenwood County

Ward McGinnis No. 1 Barb, NE NE SW section 18-24-12, in Greenwood County, topped Mississippi lime at 1,778 feet and was dry and abandoned at 1,843 feet, total depth.

McGinnis No. 1 Dater, NW NW SW section 11-24-8, wildcat in western Greenwood County, had moved in machine. This well originally was reported as No. 1 Zachritz. Same operator's No. 1 Lampe, NW NE SW section 26-24-8, another wildcat test, was a rig.

Woodson County

Mendenhall and others No. 1 Hunter, NE cor. section 36-25-14, wildcat in Woodson County, was moving in machine.

Harvey County

Empire Oil & Refining Co. and Ryan Drilling Co. No. 1 Webster, SE SE SW section 8-24-2w, wildcat in southwestern Harvey County, was dry and abandoned at 3,425 feet, total depth. Kansas City lime was topped at 2,487 feet, Chat 3,334 feet.

Sumner County

E. B. Shawver No. 4 Erker, SE SE NW section 33-31-1w, in the Wellington area of Sumner County, made potential of 1,200 bbls. of oil after acid treatment and was completed. It had Chat, the producing formation, at 3,650-88 feet, total depth.

Shell Petroleum Corp. No. 3 Scroggins "A," SE SE NW section 14-32-2, old well deepened from 2,071 feet, topped Dolomite at 2,835 feet and was bottomed at 2,884 feet. It was acidized with 5,000 gallons and made potential of 740 bbls. of oil.

Ellsworth County

Two new tests had started work in Ellsworth County. Empire Oil & Refining Co. No. 1 Janssen "B," SE SE SW section 34-17-8w, in the extreme southern part of the county, was building rig. Pryor & Lockhart No. 2 Wilkins "B," NW SW SW section 18-17-9w, in the Wilkins area, was drilling at 200 feet.

Barber County

W. I. Southern, Inc., No. 2 Davis, NE SW NW section 18-34-14w, in southwestern Barber County, was a rotary rig.

McPherson County

One new operation was reported in McPherson County. Marathon Oil Co. No. 3 Whitright, C N half S half SW section 30-19-1w, was a location.

Rooks County

Pryor & Lockhart No. 1 Bradley, SW SW NE section 31-10-16w, wildcat in Rooks County, was dry and abandoned in Siliceous lime at 3,658 to 3,701 feet, total depth. Top of Anhydrite was 1,150 feet, Topeka lime 2,887 feet, Oswald lime 3,166 feet, Conglomerate 3,456 feet. A showing of gas was reported at 2,339-42 feet, showings of oil at 3,187 feet, 3,310 feet and 3,338-47 feet.

Trego County

Continental Oil Co. No. 1 Holcomb, C E half E half NW section 26-11-23w, wildcat 3 miles south of the Wakeeney pool in northern Trego County, was acidized with 4,000 gallons and produced 439 bbls. of oil in 23 hours. Top of Anhydrite was 1,808 feet, Fort Riley 2,445 feet, Topeka 3,210 feet, Oswald (corrected) 3,602 feet, total depth 3,654 feet.

Alma Petroleum Co. & McNeeley No. 2 Rhoades Estate, C NW NE section 14-11-23w, in the Wakeeney area, was awaiting test after acidizing. After plugging back to 3,520 feet from 3,563 feet, it pumped 20 bbls. of water and 10 bbls. of oil per day before acidizing.

Stevens County

Stevens County Oil & Gas Co. and others No. 1 Kelley, C NW section 15-34-38w, in the Hugoton gas area of Stevens County, was temporarily abandoned at 2,710 feet, total depth, where it had a fishing job. At 2,702 feet, 3,000,000 feet of gas was reported.

M. (Bink) Manning announces his resignation as vice president and a director of Sterling Oil & Refining Company, Houston, and also his resignation as vice president of Houston Oil Field Material Company, and the sale of his interests in the Houston Oil Field Material Company.

California Field Report

By L. P. STOCKMAN

EL SEGUNDO POTENTIALITIES TO BE DETERMINED BY TEST

LOS ANGELES, Calif., Apr. 20.—Potentialities of the El Segundo district of Los Angeles Basin, where Republic Petroleum Co. completed a small well late last year in a heretofore unproductive area, should be determined shortly as the company's No. 2 El Segundo should be ready for a production test within a fortnight. Republic Petroleum Co. is to land a string of 7-inch in its second test in the El Segundo area within a few days as reaming operations have about been concluded. Top of the nodular shale was picked up in No. 2 El Segundo at 7,225 feet and top of the conglomerate at 7,404 feet. Schist was encountered at 7,472 feet and the company drilled into the basement 9 feet, which places the bottom at 7,481 feet. The 68 feet of conglomerate is the member from which the company must secure production and although the thickness of conglomerate encountered was not as large as desired, it should yield some oil as cores indicate a fairly well saturated condition. The extent and trend of the probable accumulation in the El Segundo area will not be determined until two or three wells have been drilled as the Republic's first two wells are too close together to indicate direction of the structure.

The Wilmington section of Los Angeles Basin, near tidewater close to Los Angeles Harbor, is showing greatly increased activity and there should be 10 wells making hole within 30 days. This is the result of oil sand encountered by Eyer Petroleum Co. in section 20-4-13 at 3,610 feet and by Sovereign Oil Corp. in section 28-4-13 at 3,275 feet. As this will mean a new oil field if commercial production is developed, work will be watched with interest. General Petroleum Corp. entered the Wilmington district a few days ago and began driving piles to support concrete foundation for a derrick 2,050 feet north and 2,375 feet west of SE cor. section 4-5-13. This well will be drilled on a lease comprising 456 acres recently obtained from Interstate Investment Corp. North of Wilmington, the Los Angeles Harbor Commission has authorized awarding of leases involving 300 acres in the railroad classification yard. Bankline Oil Co. was a successful bidder on one parcel of 100 acres, while C. W. Long was awarded 200 acres on a one-sixth royalty basis and a cash bonus out of oil production.

Tideland Development

Activity in the Wilmington district is of interest in view of an initiative petition to be submitted at an election next November. This measure would forever prohibit extension of drilling on California's beaches; provide for the development of the state's tideland oil resources through leases to upland owners privileged to exploit tideland property by directional drilling; provide for royalties to the state, amounting to 14 2/7 per cent, of which half would go to the general fund for reduction of taxation and the remainder equally divided between the improvement of ocean beaches and the state park system. Sponsors estimate this proposed law would bring to the state from $1,000,000 to $1,250,000 annually. At present the state has a leasing arrangement with operators in the Huntington Beach area who are operating slant wells from the uplands.

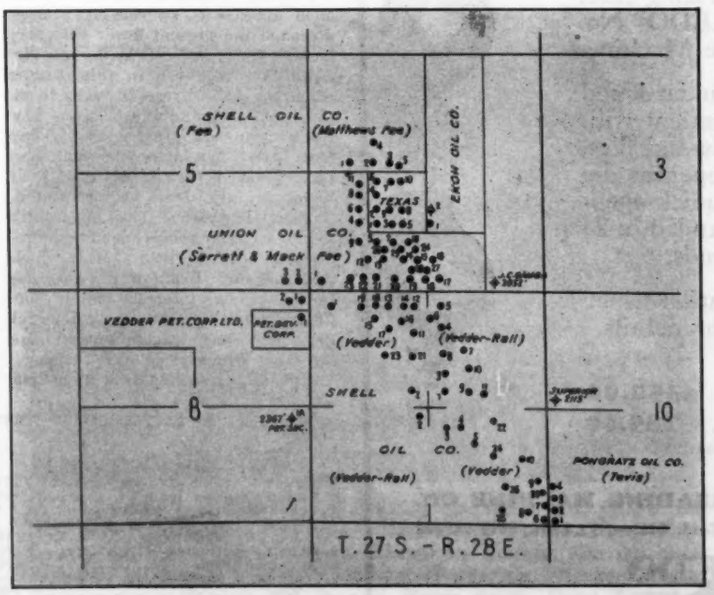
California statutes preclude tideland development on submerged property fronting on or located within any city. If the initiative petition should be ratified, it may lead to revision to permit tideland development by directional drilling. This would permit additional tideland development at Huntington Beach, Playa Del Rey and possibly also in the Redondo-Hermosa section of the Torrance field. Drilling operations have progressed westward and are gradually nearing tidewater in the Redondo and Hermosa section of the Torrance field. The city council of Redondo Beach will decide within a few days what limitations will be placed upon drilling.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	April 5		March 29			
Intercoastal-domestic:	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Diesel and gas oil	.....	.....	.....	.....	151,541	527,098
Gasoline	115,860	16,551	314,286	44,898	1,650,119	1,586,452
Kerosene	.....	.....	.....	.....	385,956	468,421
Foreign exports:						
Crude oil	327,068	46,724	5,950	864	2,473,409	2,967,298
Fuel oil	181,431	25,919	181,744	25,963	2,635,294	3,477,957
Diesel and gas oil	101,123	14,446	162,553	23,222	1,243,775	945,433
Gasoline	50,601	7,229	76,840	10,977	1,522,556	1,235,474
Kerosene	30,234	4,319	.....	.....	166,314	271,856
Other unfinished oil	.....	.....	.....	.....	6,439	42,064
Coastwise-domestic:						
Crude oil	186,648	26,664	180,534	25,791	1,693,594	1,424,652
Fuel oil	89,740	12,820	125,018	17,860	2,466,188	2,278,156
Diesel and gas oil	20,370	2,910	17,230	2,447	429,736	211,867
Gasoline	227,401	32,486	295,603	42,229	3,521,046	1,877,052
Kerosene	.....	.....	3,584	512	70,902	84,598

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Diesel and gas oil	.....	.....	.....	.....	.....	157,258
Kerosene	.....	.....	.....	.....	.....	149,715
Asphalt	.....	.....	.....	.....	.....	71,325
Lubricants	.....	.....	.....	.....	7,608	12,381
Foreign exports:						
Crude oil	.....	.....	.....	.....	628,909	550,129
Fuel oil	19,176	2,739	108,785	15,541	1,079,216	400,245
Diesel and gas oil	.....	.....	12,781	1,826	144,693	342,812
Gasoline	.....	.....	.....	.....	717,192	780,368
Kerosene	.....	.....	.....	.....	163,707	213,698
Lubricants	.....	.....	.....	.....	73,788	50,569
Coastwise-domestic:						
Fuel oil	184,172	26,310	176,481	25,212	2,096,154	1,148,135
Diesel and gas oil	.....	.....	43,186	6,169	161,072	79,662
Gasoline	65,086	9,298	109,282	15,612	1,198,158	1,021,621
Kerosene	.....	.....	4,692	670	44,692	10,149



North end of Mount Poso field, Kern County, California

Kettleman Hills

Standard Oil Co. made up for lost time this week by completing three wells in the Kettleman North Dome field and both Kenda and Standard should list additional completions within a fortnight. None of the wells finished by Standard this week registered large production although the oil was exceptionally clean. No. 32-7-Q in section 7-22-18 was brought in flowing 1,091 bbls. of 37.1 gravity oil and 820,000 feet of gas following completion at 8,625 feet. No. 2-33-J in section 33-21-17 came in flowing 1,408 bbls. of 38.2 gravity oil and 8,100,000 feet of gas per day from 7,905 feet. No. 4-33-J, same section, was swabbed in flowing 1,739 bbls. of 38.3 gravity oil and 7,760,000 feet of gas per day from 8,230 feet. This well was finished with a 7-inch liner carrying perforations at 7,385-7,558 feet, 7,766-7,855 feet and at 7,892-8,225 feet and cemented through perforations at 7,370 feet. Standard's field department killed two other wells in the North Dome which came in prematurely to carry them deeper. These were No. 61-33-J and No. 21-19-J.

Hogan Petroleum Co. finished an excellent well in the Mountain View field when No. 2 Foster in section 32-30-29 was swabbed in flowing 2,330 bbls. of 29.6 gravity oil and 2,100,000 feet of gas from 5,951 feet after the hole had been completed with 6⅝-inch liner. Preparations were started by several operators in the Mountain View field to begin drilling operations on a number of wells. Buffalo Oil Co., which is getting ready to spud in its No. 3 in section 19-30-29, has staked location for two additional projects, one on the Wildman lease in section 24-30-29. Hancock Oil Co. should begin rig construction within a day or so for No. 10 Miller in section 14-30-28. The company has already finished nine good wells on this lease. Hogan Petroleum Co. is rigging up No. 4 Foster in section 32-20-29 and this with Mohawk Petroleum Co. No. 8 Clendennen should be making hole within a few days.

Tejon Area

The Tejon area, in the extreme southern part of the San Joaquin Basin, and the Comanche Point district, in this general area, have shown enough promise to justify starting several wells. In the Wheeler Ridge-Tejon sector, Reserve Oil & Gas Co. has been engaged in a systematic program of exploratory work for more than a year. The company recently suspended drilling on No. 5

Tejon at 2,585 feet and this fifth test to be drilled by Reserve Oil & Gas Co., will remain inactive pending additional work. Meantime, the company has taken over No. 1 Tejon-Ritchie in section 33-11-19 and will attempt to develop commercial production. No. 1 Tejon-Ritchie was carried to 6,032 feet but has been plugged back to 4,805 feet. This well flowed mud and some gas for five hours before being shut in. Casing pressure is slightly in excess of 1,150 pounds. Ohio Oil Co. has staked location on the Title Insurance lease in section 36-11-19, 3 miles east of Reserve Oil & Gas Co. No. 1 Tejon-Ritchie. Approximately 2 miles south of this development, Silver Gate Oil Co. has bottomed a test in section 7-10-19 at 3,005 feet and is redrilling at 2,960 feet.

United Oil Co. is working on an interesting test in the Panorama Hills district due west of Midway-Sunset and previous tests indicate an excellent chance of production. The United's lease is on the Humauma dome forming the southern end of the prominent Panorama Hills anticline, one of the best defined auxiliary structures of the Temblor Range. It may be compared in structural relationship to the main range with Kettleman Hills, as it is a well defined individual structure 12 miles long and lying adjacent to the main fold of the Temblor Range. Drilling on the Panorama Hills anticline where United Oil Co. has spudded in a test, should result in penetration of beds approximately equivalent to the section encountered in No. 1 Panorama in which an excellent grade of crude in limited quantities was found with some gas. The light refining grade of oil found in the Trav-El well on adjoining property, although not in commercial quantities, and in the Vishnu and Erume wells, in the shallow sands, indicate possibility of developing commercial production on the Panorama anticline when wells are drilled into these sands from 2,500 to 3,500 feet within the structure.

Kettleman Dome Average

Kettleman North Dome Association during 1935 produced 11,236,485 bbls., 52,192,593,000 feet of gas, and 68,284,522 gallons of natural gasoline. These figures are not to be construed as the association's total capacity to produce, as they merely represent close adherence to the allotment under the various curtailment schedules. During 1934 the association produced 8,973,846 bbls. of crude, 51,164,479,000 feet of gas and 67,351,721 gallons of natural gasoline. On December 31, 1935, the association had completed 57 wells which together with completions prior to the time the association started brings the total to 61 wells capable of producing. Actual daily production last year was 30,785 bbls. Retiring directors and retiring officers were reelected. The present percentage participation of the members of the association follows:

Company—	Total participating acreage	Members percentages effective Apr. 1, 1936
Seaboard Oil Corp. ..	2,020	24.6042
General Pet. Corp. ..	1,860	22.6553
Continental Oil Co. ..	1,630	19.8538
Shell Oil Co.	712.625	8.6800
Kettleman Oil Corp. .	665	8.0999
Kettleman & Inglewood Corp.	382.375	4.6574
Union Oil Co.	320	3.8977
Belmont Inv. Co.	226	2.6797
Associated Oil Co. ..	120	1.5834
Standard Oil Co.	90	1.0962
Pioneer Kettleman Co.	70	0.8526
Pet. Securities Co. ..	70	0.8526
Amerada Pet. Corp...	30	0.3654
Helm & Gillan	10	0.1218
Total	8,210	100.0000

Kern River

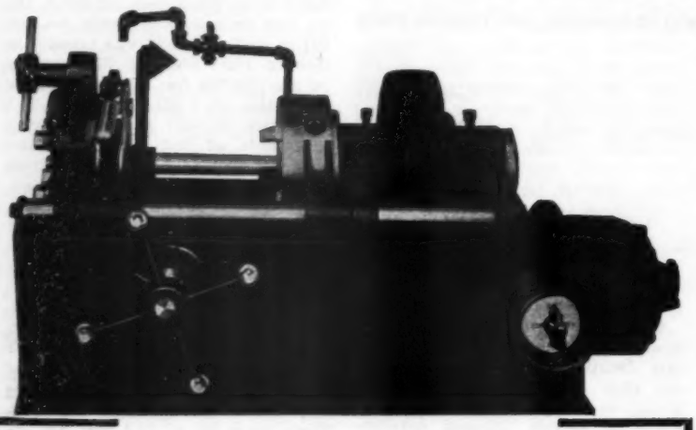
The west front section of the Kern River field continues active. Chanslor Canfield Midway Oil Co. is making a production test on No. 59 in section 23-28-27. Republic Petroleum Co., which recently finished No. 7 Strassburger pumped 311 bbls. of 15.8 gravity per day from 2,100 feet, is bailing No. 1 Fleishacker following completion at 1,981 feet with an 8⅝-inch liner carrying 125 feet of perforated. General Petroleum should also add a well as No. 5 Young is being bailed for production following completion at 2,157 feet. Ausbrit Oil Co. is still working out in the Premier area in section 20-27-27, but officials feel commercial production will be developed. This outpost will open several hundred acres if it results in good production even though it may be finished on the beam.

Drilling operations in the Edison field appears to be slowing a little although the present lower rate may be only temporary. R. E. Corbett finished the only well in this district when No. 1 Rose was brought in on the beam pumping 160 bbls. of relatively clean 16.1 gravity oil per day from 2,064 feet after the hole had been finished with a 6⅝-inch liner including 175 feet of perforated. General Petroleum has apparently found something of considerable interest in its Elk Hills wildcat which the company took over from the Doyle-McKeon interests as it has filed a total of 2,030 acres. General Petroleum has logged several gas showings which may have commercial possibilities. This well, in section 3-30-24, a few miles northwest of the productive limits of the Elk Hills, has been bottomed at 6,149 feet and has a string of 7-inch landed and cemented at 6,050 feet. On a recent test it showed some salt water and was plugged back to the shoe of the 7-inch.

Three wells, No. 21-B and No. 2 Red Ribbon of the Western Gulf and the Mohawk Oil Co. No. 1 Osborn in the Fruitvale field of Kern County should be ready for production tests within 10 days. Western Gulf should have both of its tests producing within a few days. Franco Western Oil Co. almost had a wild gas well in the McKittrick field when No. 12 in section 8-30-22 started blowing gas from 2,300 feet after the hole had been finished with a 7-inch liner carrying 85 feet of perforated. The well was brought under control. Operators in the Midway-Sunset field of Kern County should have four wells tanking oil within 10 days. General Petroleum No. 1 Main Line may exceed expectations as it has been bottomed in a rich oil sand at 2,724 feet.

Seal Beach

Continental Oil Co. completed an excellent well in the Seal Beach field of Los Angeles Basin when No. 38 Bixby was brought in flowing 1,360 bbls. of 29.3 gravity per day from 6,538 feet after the hole had been finished with a 5½-inch liner carrying perforations at 5,934-6,032 feet and at 6,064-6,538 feet and cemented through perforations at 6,064 feet. This well flowing 1,280,000 feet of gas in addition to the oil is the largest completion in Seal Beach field in a long time. Standard Oil Co. should finish the next well but Associated Oil Co. should not be far behind as its No. 18 Hellman is a little below 3,000 feet. In the Dominguez field of Los Angeles Basin Union Oil Co. completed No. 46 Callender flowing 390 bbls. of 32.3 gravity per day from 5,418 feet and drilling schedules call for completion of No. 44 Callender within 15 days and No. 45 Callender within 21 days. The latter wells are going into the Miocene. In the Long Beach field, Texas Co. recompleted No. 4 Fields after cleaning out and it was returned to production pumping 120 bbls. of 23.6 gravity from 4,750 feet. Pacific Western Oil Co. had its hands full with No. 4 on tideland permit No. 92 in the Elwood field when it blew out while the crew was bailing at 1,800 feet. It was killed and brought under control. Upon being shut in, the gas pressure built up to 1,190 pounds which indicates probability the company will finish a good well. Signal Oil Co. should add another well in the Elwood field as No. 4 on tideland permit No. 98 has been finished in the Vaqueros formation at 3,757 feet. Barnsdall and Rio Grande, jointly developing several properties, should also complete a producer as No. 9-B on tideland permit No. 88 has been finished at 3,725 feet and is being prepared for production.



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STOCKS HELD IN PACIFIC COAST TERRITORY BY CALIFORNIA OIL COMPANIES

	Feb. 29, 1936	Jan. 31, 1936	Feb. changes	Feb. 28, 1935
1. Nongasoline-bearing crude, residuum, gas and diesel oils	71,004,770	70,055,178	+949,592	65,898,916
2. Gasoline-bearing crude	40,283,269	40,642,706	—359,446	37,471,497
3. Unblended natural gasoline	1,962,073	1,750,613	+211,460	2,703,410
4. Gasoline (not including distributing and service stations)	13,396,474	11,407,921	+988,553	10,907,694
5. Naphtha distillates	*1,748,720	*1,916,722	—168,002	*1,264,095
6. All other stocks	†9,282,177	†9,297,868	—85,691	†7,537,046
Total	136,627,474	135,071,008	+1,456,466	135,773,091
*Estimated amount of unfinished gasoline contained in item No. 5	1,336,923	1,507,921		985,456
†Coke included in item No. 6	442,447	448,211		558,975

Among Gulf Coast Drilling Contractors

Five discovery wells in five years is the record established by T. A. Carlton, president of the C & C Drilling Co. of Houston, who drilled the discovery well of Salt Dome Oil Co. and Gem Oil Co. No. 2 A. B. Lawrence on the Cotton Lake prospect, northern Chambers County. Mr. Carlton entered the Gulf Coast in 1931 from the East Texas district, where he had done considerable drilling. His first well on the Gulf Coast was the discovery well of the Livingston field which was drilled for Dick Schwab. The following year the Ace field was opened for the same operator and during the next two years he drilled the discovery wells on the Vanderbilt structure in Jackson County and the Gillock structure in Galveston County. Probably the fastest drilling time ever made on a deep hole was established by his crew at the Gillock field, which completed an 8,500-foot producer for the Coast Petroleum Co. in 25 days. The discovery well of the Cotton Lake field was drilled to the 6,000-foot sand in 15 days and was flowing into the tanks within 20 days.

Smith and McDannald made a drill stem test on No. 2 Smedes at the St. Martinsville field in St. Martin Parish from 7,385-90 feet and has plugged back to 6,800 feet after testing salt water. In the same field for Continental Oil Co., No. 1 fee is coring below 7,100 feet. In the meantime at the South Houston field for themselves, No. 1 Reynolds has been completed for their second producer in this field, although no gauge is available. Contract was received from Stanolind Oil & Gas Co. to drill No. 1 Schwartz outside of the townsite. At Louise, Pure Oil Co. No. 3 Lancaster has been completed for a producer and contract has been received for No. 4 McIntyre. In Jefferson County, Bishop and others No. 1 Grinnel has been abandoned in salt water sand below 8,800 feet. Four other rigs are located at the Hastings field, Southwest Texas area and the East Texas area.

Cron and Gracey have nine rigs running, located as follows: Four at the Iowa and Roanoke fields in Coastal Louisiana for Shell Petroleum Corp., one at Manvel for Texas Co., one at Barbers Hill for Sinclair Prairie Oil Co., one at Damon Mound for the same company, and two at Placedo for Barnsdall Oil Co. and one at South Houston for Stanolind Oil & Gas Co.

Edwards Drilling Co. received contract to drill another test in the south extension area of the Dickinson field by the Kenben Oil Co. and have spudded two wildcats located as follows: One in the Orange field for Texas Canadian Oil Co., and one on the Grigsby prospect in Hardin County for David B. MacDaniel.

Nicklos Drilling Co. has two rigs running at the Tepetate field in Acadia Parish for Continental Oil Co. No. 1 Sonnier is drilling in shale below 4,730 feet and No. 1 A. Young is below 7,375 feet.

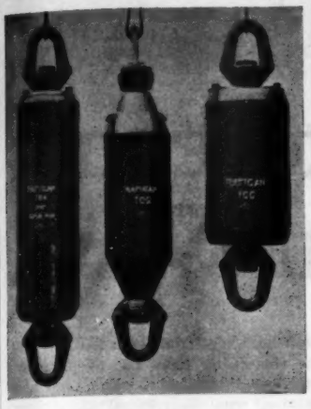
Rutherford Drilling Co. received contracts for two tests to be drilled in the Van Vleck field for Skelly Oil Co. They are No. 6-B Cobb and No. 1 Rugelsey, both of which will be spudded during the week.

Ben (Bud) Coyle has three rigs at the Jeanerette field in St. Mary Parish for Herton Oil Co. No. 1 Banta extended the field to the east when it flowed 32 bbls. per hour from sand bottomed at 6,600 feet, No. 3 Roanes is bottomed in the same sand and casing is being run, and No. 1 Carter is being deepened from 6,769 feet.

Al Buchanan, San Antonio, is drilling the important San Patricio County test, Benedum & Trees Oil Co. No. 2 Welder. The wildcat tested oil at 5,696-5,710-foot sand three weeks ago but failed to make a commercial producer. On drilling deeper, a sand with rich saturation was cored from 6,100-16 feet and completion at this

(Continued on Page 80)

T. A. Carlton, president, C. & C. Drilling Co., taken with part of his day crew at the discovery well of Salt Dome Oil Co. No. 2 A. B. Lawrence, Cotton Lake prospect, Chambers County. On the back line, left to right are Edwin Goodwin, Texas Iron Works; George Adams, Leroy Everett, Bill Brountz, Roger Smith, Gray Tool Co., and Jimmie Carlton



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Southwest Texas District

NEW LOCATIONS EXCEEDING COMPLETIONS IN THIS AREA

By GEORGE WEBER

SAN ANTONIO, Tex., Apr. 20.—The probability of gas production in the half-mile outpost well, Luling Oil & Gas Co. No. 1 Peal in the Lopez field of Webb County, and the renewal of hopes for new production in San Patricio County through showings of the Benedum & Trees Oil Co. directed the attention of Southwest Texas operators to these two tests. Elsewhere, drilling activity strengthened, and new locations exceeded completed and abandoned tests, in proven and wildcat territories. The Government Wells district in Duval County and lower coastal region of Nueces and San Patricio Counties retained their lead in volume of operations. Leasing is especially active in the Fault Line and the lower Rio Grande Valley.

The Benedum & Trees Oil Co. No. 2 Welder, located in the SE cor. of section 19, between the Plymouth and Sinton fields of San Patricio County, revived the interest of operators when it encountered an oil sand showing good oil saturation at 6,100-16 feet. A drill stem test was not run, but a Schlumberger survey will be made. The wildcat test showed oil in sand at 5,696-5,710 feet previously and tested 200 feet of oil in four minutes, but completion was not accomplished at that horizon. Sand with a gas odor was cored at 5,729 feet and 40 feet of sand with no shows was found at around 5,800 feet. Indications point to a completion, adding another field to San Patricio County and the Welder ranch.

In the Plymouth field to the east of this wildcat, several rigs are drilling, and two new producers were completed for the Plymouth Oil Co. making initials of 175 and 163 bbls. per day. Toward the south, in the Taft field, the Humble Oil & Refining Co., drilling in a sidetracked hole, encountered oil sand at 3,997-4,005 feet and will set casing, and the Shell Petroleum Corp. is coring sand at 4,860 feet.

Saxet

Sustained activity continued in the Saxet Heights and Saxet fields of Nueces County, with several completions in each of the active fields. The Saxet Heights field, on the outskirts of Corpus Christi, defined on the south, southwest and northeast, was extended to the east by the completion of new producers. Outpost tests on the north and east are drilling, and inside locations are crowded with drilling rigs.

New producers were brought in from both the 4,400 and 4,800-foot sands of the Saxet field, west of Saxet Heights. Activity in this field centers around the town of Clarkwood.

With the exception of the Benedum & Trees Oil Co. test, wildcats in these two counties failed to disclose any new production, but three new locations were made, all in Nueces County, while the same number of tests was abandoned. Santa Clara Oil Co. No. 4 Welder was abandoned at 6,000 feet and Willis Storms No. 1-A Hobbs will be abandoned, both tests in San Patricio County. In Nueces County, Cargray No. 1 Baldwin, located 2½ miles east of Clarkwood, was abandoned dry at 5,000 feet. The new tests will be Richardson No. 1 Gerhardt, 2½ miles northeast of Agua Dulce. O. W. Killam No. 1 Ellick, 1 mile southwest of the Clara Driscoll field and Oil Terminal Producing Co. No. 1 Thurman, 8 miles south of Corpus Christi. Besides these new tests, seven other wildcats are drilling in this area.

Aransas

In Aransas County the Buckingham Oil Co. No. 1 McCampbell, a wildcat, was idle as a larger rig was being moved in. The crew was making a test of a sand shown at 6,534-46 feet when the testing tool opened and the drill stem stuck. The well flowed gas and some oil for a short time through the drill stem and was mudded in. The hole is bottomed at 7,501 feet. If completed for a producer, the well will open the first field in that county.

Webb

In Webb County the Luling Oil & Gas Co. No. 1 Peal, north outpost of the Lopez field, showed indications of making a gas well. The well tested gas in sand at 2,077-90 feet and operators planned to go to the Pettus sand and then run an electrical survey. Water was encountered at 2,337 feet, however, and the test is now being plugged back for completion in the Lopez producing sand. The well is the highest of any yet drilled on the structure, indicating a considerable northeast production trend to the field. Drilling in Lopez has centered chiefly in the south and southwest section of the field due to the important southward extension well brought in by C. F. Lewis in October. The results of the Luling Oil & Gas Co. test are expected to bring much activity to the northeastern section of the field.

Lopez

Five new producers were added to the Lopez field during the week, and several other tests are on the sand for early completion. The O'Hern field toward the south gained four producers and one test in the field was abandoned. The Cole Petroleum Co. completed No. 95 Benavides for a gasser and abandoned No. 95 dry at 3,455 feet.

Duval

In Duval County, Loma Novia led the field as usual in number of completions, with 13 new producers. Initial production tests ranged from 5 to 35 bbls. per hour, and several of the wells were brought in on the pump. Drilling in this field is mainly in the southern portion, consisting of inside locations. One test, Reed & Stover No. 1 Duke, was abandoned at 2,703 feet. The test was located in Survey 64 in the intervening area between the Loma Novia and Government Wells fields on the north.

Failure of Atlantic Oil Producing Co. No. 2-E Welder in Survey 381 defined the Seven Sisters field on the southwest portion of the extreme western extension of the field. Increasing activity in this field resulted in the completion of nine new oil producers and one gasser, four of the new producers being brought in from the Chernosky sand at 2,200 feet and the remaining from the deeper Government Wells sand. The new production was distributed throughout the field, including wells on the west, east and southwest edges of the field, and in the north portion recently opened to production by Humble Oil & Refining Co. No. 2 Wright in Survey 118.

Lower Rio Grande

Development of production during the week's drilling in the lower Rio Grande Valley was confined to the Samfordyce field, where two producers were completed and a new northwest extension was anticipated. Further testing of the new deep sand of the field found in the J. T. Barlow No. 1 Marta Flores de Chapa may fix the importance of that discovery. The well showed a good test and was completing when it went to gas. Recompletion will be attempted on a small choke. Closed in casing pressures run as high as 1,225 pounds. The success of this well is expected to lead to much increased activity in the northern portion of the field where the test is located.

The Salt Lake area of northern Hidalgo and Willacy Counties is again the scene of leasing activity with 5,500 acres taken during the week. No locations have been announced for the new blocks, and the area's only wildcat at present, Shell Petroleum Corp. No. 1 Yturria Land & Livestock Co., is getting under way after being shut down for two weeks by a boiler explosion. The test is bottomed at 2,431 feet.

Pearsall

The Pearsall field again came to the front in Southwest Texas developments when additional producers were brought in. Amerada Petroleum Corp., major operator in the field, swabbed in No. 1 Corry & MacWilliams on Tract 3 for 116 bbls. in eight hours on a one-quarter inch choke. The well was then shut in. The company's No. 1 Kothman made 70 bbls. per hour on a three-quarters inch choke. Thornton Davis No. 1 Halff & Oppenheimer was completed for 110 bbls. per hour. All are producing from the Austin Chalk.

GULF COAST WATER SHIPMENTS—FEBRUARY, 1936

Company and terminal—	Crude		Refined		Total
	Coastwise	Exports	Coastwise	Exports	
Atlantic Pipe Line Co.:					
Atreco	1,673,638.19	.....	4,967.34	.....	1,678,605.53
Texas City	213,579.57	.....	5,192.20	.....	218,771.77
Harbor Island	481,575.73	.....	.....	.....	481,575.73
Coastal Refineries*:					
Port Isabel	.....	.....	72,600.79	.....	72,600.79
Gulf Oil Corp.:					
Port Arthur	471,621.56	.....	2,831,834.67	11,965.83	3,315,422.06
Humble Oil & Refining Co.:					
Baytown	432,294.12	.....	2,684,824.70	391,989.48	3,510,108.31
Harbor Island	1,745,525.58	108,644.26	.....	.....	1,857,169.84
Texas City	277,921.60	61,343.66	.....	.....	339,275.26
Ingleside	85,276.61	.....	.....	.....	85,276.61
Magnolia Petroleum Co.*:					
Beaumont	1,027,395.97	.....	2,374,742.50	.....	3,402,138.47
Pure Oil Co.:					
Smiths Bluff	223,045.00	.....	769,810.00	.....	992,855.00
Shell Petroleum Corp.:					
Houston	217,460.00	.....	1,090,534.00	200,618.00	1,508,552.00
Norco	.....	.....	597,039.00	.....	597,039.00
Standard Oil Co. of La.:					
Baton Rouge	306,434.00	146,585.00	2,203,326.00	302,767.00	3,959,112.00
Sun Pipe Line Co.:					
Sabine Pass and Sun	1,298,674.31	.....	.....	.....	1,298,674.31
The Texas Co.:					
Port Arthur	1,267,551.60	76,339.00	2,375,744.00	652,796.00	4,372,430.00
Miscellaneous	1,751,236.47	570,689.30	2,855,938.29	864,525.12	6,072,489.09
Total February, 1936	11,277,279.72	962,592.22	17,896,552.49	2,424,661.43	32,562,086.77
Total January, 1936	12,701,675.69	980,071.32	20,706,215.36	2,365,392.55	36,753,355.92
Difference	1,324,395.97	16,479.10	2,809,661.86	59,267.88	4,091,269.15

*No distinction made between coastwise and export shipments.

Athens Oil Co. Sale

NEW ORLEANS, La., Apr. 20.—Sale of the Athens Oil Co. of Louisiana to the Pan-American Production Co. of Texas was confirmed in New Orleans. The sale, which was for $500,000, was effective as of April 1.

The company owns the Sorrento oil field in Ascension Parish. J. R. Turnbull of Houston is president of the Athens company and Harry Fotiades is secretary and treasurer. It is expected the company's New Orleans office will be closed shortly.

Texas and Louisiana Gulf

NEW FIELD AT COTTON LAKE HAS DIVISION IN OWNERSHIP

By F. L. SINGLETON

HOUSTON, Tex., Apr. 20.—Salt Dome Oil Corp. and Gem Oil Co. No. 2 A. B. Lawrence, on the Cotton Lake prospect, northern Chambers County, was washed in from a screen setting made in sand from 6,647-6,661 feet, total depth, and in a 21-hour period ending at 9 a.m. April 17, flowed 197 bbls. 36 gravity oil with tubing pressure 450 pounds. The well was still making some wash water and it has been estimated initial flow will be around 20 bbls. per hour after it has thoroughly cleaned itself.

Cotton Lake is the first field to be discovered on the Gulf Coast in several months in which the acreage is not controlled by one or two companies. The prospect is divided into many ownerships which is expected to lead to considerable drilling. Salt Dome Oil Co. has already made location for No. 1 A. B. Lawrence, 480 feet due west of the discovery and four offsets will probably be made during the week by Tide Water Oil Co., Fohs Oil Co. and Humble Oil & Refining Co.

The discovery well is believed to be located on a deeply seated salt dome and it is the third field of its type found around the edges of Galveston Bay within 16 months. Production is from 9 feet of Marginulina-Frio sand encountered at 6,653 feet.

Anahuac

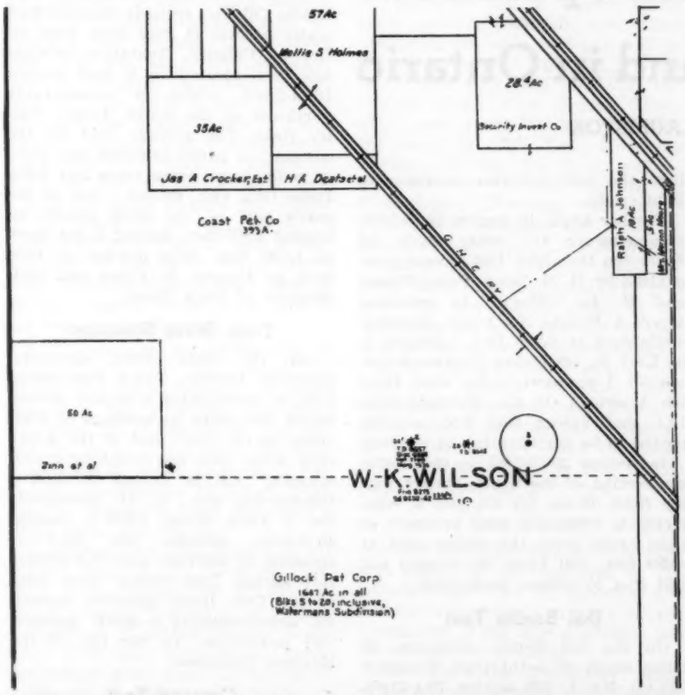
Humble Oil & Refining Co. No. 3 Gripon, in the Anahuac field, Chambers County, was completed as the second producer from the Marginulina sand when it flowed 27 bbls. of oil per hour through a quarter-inch choke with tubing pressure 950 pounds and casing pressure 1,050 pounds. It was originally drilled to the Frio sand at 7,241 feet after encountering salt water in the top at 7,226 feet. It is on the northeast side of the field in section 51, H.&T.C. Survey. The same company completed two more wells in the Frio sand. No. 8 White in the north end of the field flowed 19 bbls. per hour through a quarter-inch choke, and No. 20 Wilcox in section 50, H.&T.C. Survey, made 22 bbls. per hour through a quarter-inch choke.

Manvel

At the Manvel field, Brazoria County, Bowles and Borsodi No. 5-B Norvell extended the field to the northeast when it flowed 25 bbls. per hour from the Oligocene sand bottomed at 5,725 feet. The flow was through a 7/32-inch choke with the tubing pressure 500 pounds and casing pressure 600 pounds. Seven-inch casing was cemented at 5,694 feet. Turman Oil Co. No. 3 Hart in Lot 8, H.T.&B. Survey No. 24, was completed in the deep sand at 5,729 feet and made 29 bbls. per hour through a quarter-inch choke with tubing pressure 575 pounds and casing pressure 650 pounds.

Dickinson

Kenben Oil Co. has derrick up for No. 1 Stewart in the south extension area of the Dickinson field, Galveston County, which last week received its first oil well. It is 660 feet due south of No. 1 Stewart, a distillate producer in the W. K. Wilson Survey. To the north, in the J. S. Jones Survey, Humble Oil & Refining Co. No. 2 Magle is bottomed at 8,040 feet and is running 7-inch casing to test a showing of oil and gas that was encountered at 7,948 feet. The company's No. 6-B Stewart is a new location 1,136 feet north of the south line and 245 feet east of the west line, the east half of block 16 in the W. K. Wilson Survey.



South extension area, Dickinson field, Galveston County, showing location of Coast Petroleum Co. No. 3 Stewart, first oil well. Two other wells are distillate producers

(Map courtesy of W. W. Zingery, Houston, Tex.)

Victoria County

There were three producers completed in the Placedo field, Victoria County, the past week and three are being prepared for completion test after showing considerable oil on drill stem tests. Barnsdall Oil Co. No. 3 J. M. Pickering in the S.A.& M.G. Survey No. 5, topped oil sand at 4,759 feet and was completed at a total depth of 4,772 feet for an initial production of 144 bbls. in eigh hours drill stem in sand bottomed at 4,773 feet.

Hardin

Atlantic Oil & Producing Co. and others No. 1 Hardy, 3,660 feet north of the discovery well of the Hardin field, Liberty County, is being deepened to approximately 8,000 feet after a production test in the discovery horizon tested nothing but salt water on a seven-minute drill stem test from 7,498-7,550 feet through a quarter-inch choke on bottom and a three-eighths inch choke on top. This is the first well to be drilled since the field was discovered in July, 1935. Location is in the J. Roberson Survey.

Amelia

Glenn H. McCarthy No. 2 Longe, at the Amelia field, northern Jefferson County, blew out and caught fire while the operators were preparing to core from a total depth of 5,581 feet. The well ran wild for about 24 hours and was extinguished when the hole bridged over. It has been estimated flowing 50,000,000 feet of gas per day. The hole was being deepened after it failed to make a producer at 5,423 feet. Seven-inch casing was cemented at 5,423 feet.

Harris County

On the northwest side of the South Houston field, Harris County, two more wells are scheduled to be completed during the week. Smith and McDannald No. 1 Reynolds topped oil sand at 3,950 feet and is bottomed in sand at 3,970 feet with 7-inch casing cemented at 3,945 feet. Sterling Oil & Refining Co. No. 2 Summers is bottomed in oil sand at 4,825 feet and is preparing to test with 5-inch casing cemented.

Coastal Louisiana

The discovery of deeper producing horizons at the Jeanerette field in St. Mary Parish, Caillou Island field in Terrebonne Parish and the completion of the sixth deep producer in the Lafitte field in Jefferson Parish were the featured developments along the Louisiana Coast the past week.

A deeper producing horizon for the Caillou Island field in Terrebonne Parish was uncovered by the completion of Texas Co. No. 2 Terrebonne Bay which flowed 1,465 bbls. of pipe line oil per day through a three-eighths inch choke with tubing pressure 1,180 pounds. Production is from sand bottomed at 6,842 feet. Seven-inch casing was cemented at 6,844 feet. Other wells are producing from 3,200 to 6,200 feet. Location is in section 19-2s-20e.

Texas Co. No. 3 Rigolet, in the Lafitte field, Jefferson Parish, was completed at 9,455 feet and flowed 1,612 bbls. of pipe line oil per day through a three-eighths inch choke with tubing pressure 1,450 pounds. Sand showing oil was encountered at 9,395 feet and 7⅝-inch casing was cemented at 9,396 feet. This is the sixth deep well to be completed, all of which are producing from 9,400 to 9,600 feet. No. 4 Lafitte in section 20 picked up a shallow oil sand at 4,963 feet and is coring ahead to the deep pay below 6,117 feet. This shallow sand has not been encountered in the other wells.

The third producer for the Garden Island dome, in Plaquemines Parish, was brought in by the completion of Texas Co. No. 18 State which flowed

1,050 bbls. of pipe line oil per day through a three-eighths inch choke with tubing pressure 750 pounds. It was completed at a depth of 4,511 feet. It is located in section 37-23s-33e.

Tide Water Oil Co. No. 2 Smedes, in the St. Martinsville field, St. Martin Parish, made a drill stem test from 7,385-90 feet and showed 53 stands of salt water and 3 stands of mud with no show of oil and the hole is now plugged back to 6,800 feet where another test will be made. The hole was drilled to a depth of 8,739 feet and the tests were made after an electrical coring test was made of the hole. Continental Oil Co. No. 1 fee is coring in shale below 7,104 feet.

Herton Oil Co. No. 1 Carter in the Jeanerette field in St. Mary Parish, which last week tested several stands of oil on a drill stem test from 6,741-69 feet which appeared to be a new sand, failed on a production test and is now being deepened to the discovery horizon. The same company's No. 1 Banta extended the field to the west when it flowed 32 bbls. per hour through a quarter-inch choke with tubing pressure 1,575 pounds and casing pressure 2,400 pounds. The well is flowing from the shallow sand which was encountered in the company's No. 2 Roanes. Approximately 835 feet southeast of No. 2 Roanes, the company's No. 3 Roanes cored the 6,600-foot sand and has cemented casing preparatory to testing. Location is in section 40.

At the Tepetate field in Acadia Parish, Continental Oil Co. No. 2 Homeseekers Development Co. flowed 368 bbls. in 24 hours when tested through perforated 7-inch casing which was set on bottom at 8,313 feet. Same company's No. 1 Ortego, in section 29, is coring oil sand at 8,300 feet and should be completed during the week.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Apr. 18.—Deliveries to the Calgary refineries from the Turner Valley field in March totaled 76,687 bbls. compared with 74,146 bbls. in February and a 1935 monthly average of 80,710 bbls. Imperial Oil, Ltd., reported receipts of 3,618 bbls. of clear naphtha, 62,768 bbls. of discolored naphtha and 2,538 bbls. of light crude, a total of 68,924 bbls. Bell Refining Co. reported total receipts of 7,763 bbls. In February the Imperial company received 65,193 bbls. and the Bell refinery 8,953 bbls.

Turner Valley Field

In South Turner Valley, the Royalite Oil Co. has located a new test in the NW quarter section 33-18-2w5, the old Sterling-Pacific section. Work will be started as soon as the rotary rig now in use at Royalite No. 27 in North Turner Valley is free. The new test will be known as Sterling-Pacific No. 3. Sterling-Pacific No. 1, in NE quarter of the same section, is a good producer; Sterling-Pacific No. 2 producer is just east of the center line of the section. Sterling Royalties No. 1, another good producer, is near the south line of the section. The acreage and production were acquired some time ago by the Royalite company. Calgary & Edmonton Corp. has a royalty interest. Sterling-Pacific No. 3 location is north of the prolific section 28 and on the west side of the structure.

In section 28-18-2w5, Turner Valley Royalties No. 1, LSD 13, is below 5,400 feet after drilling through the McDougall-Segur sand between 5,050 and 5,080 feet. Farther south in the same section, Renfrew Royalties No. 1, Morris & Goodfellow, LSD 3, is cleaning out to deepen in the lime from 6,022 feet. Roy Widney has been placed in charge. At 15 feet in the lime the hole contains considerable light crude.

Farther south, in section 21-18-2w5, arrangements are being made by Sovereign Royalties, Ltd., recently organized by H. M. Black, Percy Timms and R. B. O'Regan, to complete Myers & Wright No. 1 test, standing unfinished at 2,265 feet. Location is in LSD 14, offsetting Highwood-Sarcee No. 1 producer to the west. British American Oil Co., Calmont Oils, Ltd., and Vulcan Oils, Ltd., are reported to be participating in the test.

In section 20-19-2w5, in the northern section of the South Turner Valley field, Home Oil Co. No. 6, completed in 1930 as a good producer of light crude from the Home sand at 4,689 feet, will likely be cleaned out and shot to restore production.

Del Bonita Test

On the Del Bonita structure, 30 miles south of Lethbridge, Terminal Oil Co. No. 1, NE section 18-1-21w4, is testing oil and gas shows encountered in the Sunburst sand. Casing was perforated and the hole bridged back to 4,750 feet to protect the Madison lime where good shows were also encountered. After washing the sand, the water was swabbed down to 3,000 feet, when gas pressure began to show, and another 500 feet of swabbing released a pressure that forced the tools to the top of the casing where they jammed. A leak also developed and a Dresser collar leak clamp was ordered by airplane from Buffalo, N. Y. When it is adjusted a flow test will be made.

Tests in the Foothills

In the Jumping Pound district west of Calgary, Northwest Co. No. 3 Bow River, LSD 6, section 31-24-4w5, is below 100 feet after getting a small show of gas at 71 feet. The Northwest Co. No. 4 Bow River, LSD 2, same section, is hauling equipment.

Operations in most of the foothill areas have been hampered by bad weather and poor roads. On the Kootenay dome, Roxana Petroleum No. 1, section 8-24-7w5, has a standard outfit waiting for construction of a short road to the location.

On the Mill Creek structure, near Pincher Creek, Weymarn Petroleums No. 2, LSD 5, section 7-6-1w5, is standing at 5,665 feet waiting for cement which cannot be moved in owing to bad roads. On the Watson structure, Mar Jon Oil Co. No. 3, LSD 3, section 4-10-2w5, is standing at 4,200 feet after getting some oil showings. Mar Jon-Maxmont No. 4, LSD 10, section 20-9-2w5, has resumed.

Aldersyde District

On the Aldersyde structure, east of Turner Valley, Ranchmen's Gas & Oil Co. No. 1, LSD 16, section 13-20-29w4, is below 6,697 feet. Farther south and west, Arca Development Corp. No. 1, NW section 24-18-1w5, has derrick up and is waiting for equipment. Canadian Western Natural Gas Co., Imperial Oil, Ltd., and Calgary & Edmonton Corp. are jointly interested in this test which will be drilled to 7,500 feet if necessary.

North of Ranchmen No. 1, the Twin dome structure will be tested by Glen Riddle Oil Co., recently incorporated under Alberta charter with head office at Calgary. Tentative location has been spotted in S half section 16-21-28w4, which is considerably northeast of the North Turner Valley field. The acreage held by the company is partly freehold and partly under lease. Some years ago Twin Dome Oils, Ltd., drilled a test in the north half of the same section to around 1,800 feet, getting a gas show at 1,180 feet. This acreage is now held by Jacques de Foras and Jack Hagman of High River.

Twin River Structure

On the Twin River structure, southern Alberta, Clinch Petroleums Ltd., is undertaking a seismic survey which will cover its holdings of 3,000 acres on the south end of the structure. After these are completed a new company will be formed to drill a commercial test. E. H. Rosenburg No. 3 Twin River, LSD 9, section 16-2-20w4, spudded last year, is standing at 333 feet, and will resume this spring. Two earlier deep tests on the Twin River structure showed oil, approximating a small commercial production, in the top of the Madison limestone.

Comrey Test

On the Comrey structure, southeastern Alberta, McDougall-McLeod Oil Co. No. 1, section 9-5-1w4, is running casing preparatory to resuming from 3,200 feet. The potential producing horizon is in the Madison limestone, which is looked for around 3,500 feet.

Athabaska Field

In northern Alberta, Alfred Hinds and associates of Calgary are preparing to start work on their holdings surrounding the town of Athabaska Landing, where they have secured a prospecting permit from the Alberta government covering approximately 20,000 acres. Mr. Hinds accompanied by Dr. J. O. G. Sanderson, petroleum geologist, of Calgary, left recently for Edmonton whence they will proceed to the field to supervise preliminary operations. Tentative plans call for No. 1 test to be drilled east of the townsite. The lease, of which the present townsite is the approximate center, covers land in Townships 23-66w5 and 24-66w5. A well drilled by the Dominion government in 1894, a few miles west of the townsite, encountered several gas shows before discontinuing at 1,771 feet. Recently, Athadome Oils, Ltd., drilled west of the old government gasser to 2,504 feet, encountering several gas shows and a sand carrying considerable heavy asphaltic crude.

Cardston Gas Test

In the Cardston area, southern Alberta, Franco Oils No. 1, LSD 6, section 5-3-25w4, standing for some months at 2,700 feet is reported making considerable gas. A number of gas shows were met in various horizons, and some crude around 2,500 feet. The test, financed mostly by local capital, was started to develop a gas supply for the town of Cardston. Drilling will likely be resumed this spring.

Ontario Drilling

In the Eden field, Elgin County, E. P. Rowe No. 4 Ball, Lot 26, Concession 8, Bayham Township, finished at 1,350 feet with 270,000 feet a day open flow from 34 feet of Clinton sand. It will be shot. Toward Mabee Corners, M. G. Dean No. 2 finished in the Clinton around 1,300 feet with about 165,000 feet a day of sweet gas. Olga Gas No. 2 Claude A. Wilson, Lot 24, Concession 8, Bayham Township, finished with 300,000 feet a day from the Clinton, has been connected with the Dominion Natural Gas Co. lines, production having been contracted at 30 cents per 1,000 feet. Olga No. 3 will be drilled in the southeast corner.

In Chatham Township, Kent County, Union Gas Co. No. 3, SW Lot 6, Concession 14, is in shale below 2,500 feet after getting about 25,000 feet of gas at 1,608 feet and traces of oil at 1,745 feet. It will be deepened for a test of the Trenton.

In the Dawn field, Lambton County, G. F. Gregory & Son No. 2, E half Lot 22, Concession 2, Dawn Township, finished dry at 2,000 feet.

Harry Smith and associates of Windsor have bought the Robert Kettle oil farm about a mile west of Marthaville. The property has about 40 shallow pumpers. The new owners will clean out and acidize and drill.

Ajax Officers

Shareholders of Ajax Oil & Gas Co. elected the following officers: A. J. Anderson, succeeding the late F. L. Culver as president; W. H. Shaw, vice president; directors, H. W. Knight, James Lyons and A. Burrell, manager and secretary-treasurer. In addition to drilling for gas in southwestern Ontario fields, the company is interested in the Mid-American leases in the Wyoming field.

Imperial Operations

The annual report of Imperial Oil, Ltd., of Toronto shows total net profits for 1935 from all sources, after all charges and provision for income taxes, of $25,229,850 compared with $25,771,653 in 1934. Imperial subsidiaries completed one well and began another in Turner Valley, acquired an interest in a well in the southern extension of the field and

(Continued on Page 80)

Michigan Field Report

EXTENSIVE WILDCAT FLURRY FOLLOWS PRODUCTION DROP

By
PAUL A. ELLIOTT

MUSKEGON, Mich., Apr. 20.—Faced with the lowest daily average production in 13 months, interest in extensive wildcat drilling projects is intensified.

Dr. R. A. Smith, state geologist, pointed to the greatly increased home refinery markets for Michigan crude and predicted more wildcats likely to be drilled during the next six months than ever before. Permits to drill already have reached nearly 200 compared with 102 from January 1 to April 10, or nearly double. The list includes a larger proportion of wildcats than during any like period since Saginaw in 1925.

The price of crude, now $1.32 per barrel for the bulk of central Michigan production, also is expected to advance because of frantic efforts of a majority of the state's independent refineries to maintain a supply.

The search for new gas reserves to meet the demand for 100 per cent instead of a 50-50 mixture of natural and artificial fuel for Grand Rapids, second largest city in the state, also is expected to bring increased wildcatting.

Production

When average daily production of 12 Michigan fields dropped to 32,744 bbls., it marked the lowest output since the week of March 9, 1935, when it slumped to 31,927 bbls. Impassable roads and monthly inventories were blamed, however, for the unusually low production during both periods though the results were more serious this year because of greater demand for Michigan crude. The decline for the week ended April 11, 1936, was 6,230 bbls. a day under the average of 38,974 bbls. maintained during the week ended April 4.

Greatest decline was registered in the Porter-Yost, Greendale-Chippewa and Vernon-Leaton pools, all older producing areas in the Mount Pleasant area. The first dropped 2,310 bbls. a day, the second 1,082 bbls. and the third, 1,636 bbls. Crystal-Montcalm, Ogemaw and Beaverton also added to the downward movement losing about 1,450 bbls. a day combined. Several smaller fields showed a slight increase.

There was some optimism, however, in the report of the Michigan Oil Producers Committee on the March total which with January and February kept the state's record more than 1,000,000 bbls. a month for 15 consecutive months. The first quarter total of 3,422,312 bbls., or an average of 37,585 bbls. a day, was nearly 10 per cent ahead of the record for the corresponding period last year when the total was 3,189,823 bbls., or a daily average of 35,490 bbls.

The greatest decline during the first quarter came in the year-old Crystal-Montcalm field where operators were believed to have pulled their wells too heavily resulting in water encroachment and other operating troubles. The need for crude has been so great operators have tended to forget the water danger, greater in Crystal than in the other major fields because of the comparatively shallow pay sands.

Crystal—Montcalm

Despite this situation, Crystal turned in the best new completion record of the week with an estimated 2,800 bbls. of added daily production in two Dundee producers. J. W. Leonard, Jr., trustee, No. 4 John Tow, SW NE SE section 3-10n-5w, Crystal Township, Montcalm County, made 100 bbls. flowing open the first hour and was pinched back to avoid water. Limestone was encountered at 3,177 feet and drilling suspended when the drill hit pay at 3,181 feet.

Acid treatment boosted the output of the Daily Crude Oil Co. No. 1 John Flint from 5 to 427 bbls. a day. The well, in section 35, Ferris Township, Montcalm County, was completed last August with an initial of 115 bbls. in the Dundee.

J. W. Leonard, Jr., trustee, No. 1 Jarfster, SW SW NE section 11, Crystal Township, between the same operator's No. 1 Durbin discovery and Pure No. 1 Steadman, recently brought in as a southerly extension test, failed to strike commercial pay and was plugged at 3,212 feet. Dundee was topped at 3,174 feet with a slight show at 3,197 feet.

A possible half mile southwest extension test, T. F. Caldwell, Inc., No. 1 Nellie Davies, NE SE SE section 9, Crystal Township, was being watched as it neared Dundee depth below 3,000 feet. Traverse and other formations were reported favorable.

Testing of Jetter Oil Co. No. 1 Lawrence Pitcher, SE SE NW section 5, a 2-mile west extension test in Crystal Township, was delayed by a collapsed string of 6-inch casing run to the top of the Dundee when it buckled in the second joint above bottom.

Midland County

Pure Oil Co. No. 1 Katherine and Charles Cassell, C N NE NW section 11-13n-2w, Jasper Township, Midland County, was rated good for 200 bbls. a day on a 12-hour test after treatment in the Dundee at a total depth of 3,443 feet. Pure No. 22 Mina C. Narmore, was plugged back to 3,423 feet and testing for a possible 25 to 50-bbl. well in Porter Township, C S N SW section 15-13n-1w.

Jetter Oil Co. No. 1 French, NE SW SE section 14, Porter, ran 5-inch at 3,350 and was being watched as a possible eastern extension.

Beaverton—Gladwin

After striking water at 3,972 feet in No. 1 James Reid, NW NW SW section 12-1n-2w, Beaverton Township, Gladwin County, Sun Oil Co. plugged back to 3,904 feet where treatment was planned in the mile-east extension test. Dundee limestone was topped at 3,840 feet. In the Beaverton area two more permits and seven other active projects were reported.

Ogemaw County

Ogemaw County stepped to the front with a new 100-bbl. Dundee oil producer and a gasser which made nearly 3,000,000 feet after treatment, the only real gas well in the northern field. Kinwell Oil Co. No. 2 Golf Club, NW SW SW section 20-22n-2e, West Branch Township, made about 100 bbls. daily on the pump at 2,573 feet. Muskegon Development Co. No. 2 A. and L. Garnett, NE SW NW section 28, West Branch Township, which made 670,000 feet naturally the week before, was more than quadrupled with treatment in the Traverse topped at 1,760 feet and completed at 1,767 feet. The gas will be piped to the Producers Refinery at West Branch now in the process of construction.

Mills Oil, Inc., No. 1 Jaqua, NW NE SW section 6-21n-3e, Mills Township, produced intermittently at the rate of 20 bbls. daily, natural, for six weeks, was ready for treatment at 2,629 feet, 152 feet in the Dundee topped at 2,477 feet.

Gas Wells

About 75,000,000 feet of open flow was added to the potential of the tri-townships field of Mecosta and Montcalm Counties last week by the completion of six new producers and deepening of a seventh.

The Belvidere Township, Montcalm County, section was extended about half a mile southward by the Turner Petroleum Corp. No. 1 M. Dawes, C NE NW section 15-12n-7w, which made 8,300,000 feet when completed in the Michigan Stray. Another edge well on the southern boundary was brought in by D. F. Jones on the Abraham Sherman lease, C SE SE section 10, Belvidere, for an open flow capacity of 22,000,000 feet. In the heart of the proved territory Hy-Nor Gas & Oil Corp. No. 1 Eckert, C N NW SE section 10, flowed at the rate of 12,000,000 feet daily. J. P. Mikesell No. 1 Clark and Ina Miller, C NW NW section 2, same township, made 8,000,000 feet a day.

Edward Stewart completed No. 3 Henry G. Houghton, C SW NE section 33-13n-7w, Millbrook Township, Mecosta County, for an open flow of about 20,000,000 feet at 1,317 feet after topping the shallow gas sands at 1,288 feet and the pay at 1,290 feet. Leslie T. Barber, Robert Fothergill and others No. 1 James Stephens, C NE SW section 29, same township, also was brought in for 2,000,000 feet daily.

Columbia Oil & Gas Co. opened a new source of gas in the Hinton Township, Mecosta County, section by deepening No. 1 Freeman, section 24-13n-8w, and greatly increasing its flow to 22,500,000 feet. Originally completed at 1,311 feet on a block of 4,000 acres, it was deepened about 20 feet. Other tests drilled less than 10 feet into the pay are expected to be deepened.

Wildcats

Hopes for a new commercial oil field in northwestern Saginaw County, raised last fall by paying production in King Drilling Co. No. 1 Kube, Richland Township, near Hemlock, were dashed by failure of Charles Bell No. 1 Anna and Ludwig Wegner, SW SW NW section 10-11n-2e, Fremont Township. Bottom water was struck at 3,210 feet and drilling suspended at 3,216 feet with a hole full. Dundee was topped at 3,116 feet and no show was reported. The Wegner test is 3 miles south of Hemlock and the Kube 3 miles northwest.

Traces of oil were reported found in Lee Brown No. 1 S. Spicer, SW SW SW section 6-2s-8e, Canton Township, Wayne County, test said to be nearing Trenton limestone at about 4,000 feet.

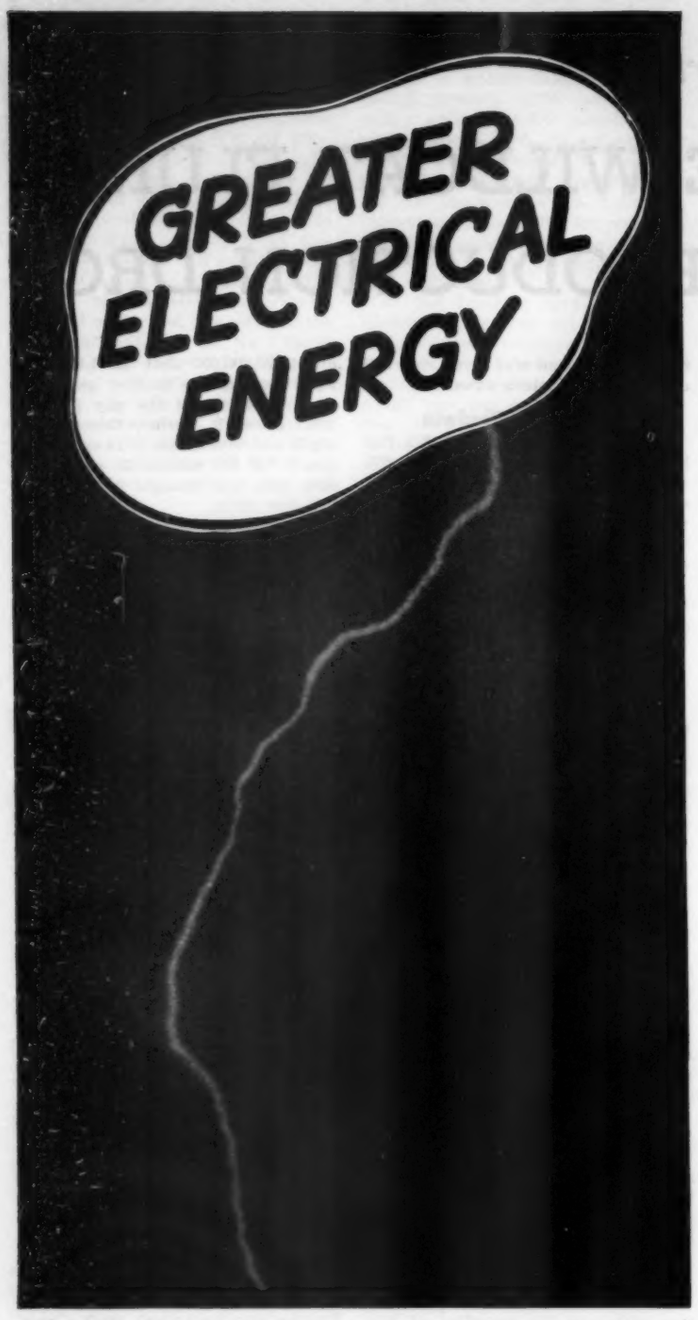
A. V. Oil & Gas Co. No. 1 Roe, SE SE SW section 19-6s-6e, Dundee Township, Monroe County, which made about 10 bbls. an hour in the Trenton two weeks ago after a shot, settled down to 50 bbls. a day but was still considered of commercial value because of high grade oil.

A show of oil was reported through nearly 3,000 feet of water in G. R. Thalman and Joseph A. Morris, trustees, No. 1 Augusta Kohlman, NE NE NE section 10-26n-7e, Millen Township, Alcona County.

Wallace Markle No. 1 Frank Opaka, NE NE SE section 4-15n-11e, Grant Township, Huron County, in which a show was reported near the top of the Dundee, was still drilling below 2,900 feet.

Mid-State Development Co. No. 1 A. J. Burleson, SE SW SE section 21-10n-5e, Taymouth Township, Saginaw County wildcat, was cased and shut down above the Dundee at 2,612 feet. St. Louis Pipe & Supply Co. No. 1 John Yadovack, SE NW SE section 13-10n-2e, Brant Township, Saginaw County wildcat, remained shut down at 2,853 feet without casing.

Miller Brothers No. 1 Mae Ryan, NW SE NE section 22-9n-1w, Elba



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Township, Gratiot County, wildcat, failed to respond to treatment in the upper Traverse limestone at 2,447.5 feet, where a high gravity crude, 46.7 Baume, was encountered. Traverse was topped at 2,436 feet.

Two Gratiot County gas tests were pronounced failures in the Michigan Stray sands last week. C. W. Collins No. 1 A. K. Tomlin, SW NW SW section 27-11n-4w, Sumner Township, was dry at 1,109 feet. The Michigan Stray was missed completely though light shows were encountered in the Marshall at 908 feet. It was a mile north of two producers.

H. L. McMillen No. 1 Ida Bishop, C S N NW section 6-10n-4w, New Haven Township, was dry.

No. 1 John Murphy, NW NW SW section 12-14n-5w, Deerfield Township, Isabella County, after temporarily abandonment, following failure in the Marshall sand, is being deepened. Pure Oil Co. No. 1 Keeler-Mitchell, in section 10, Broomfield Township, same county, was expected to run casing late last week preparatory to drilling into the Dundee as a test oil well in the heart of a gas field.

J. C. Alder No. 1 Murphy, section 12, Deerfield Township, may be deepened for oil after failure for gas.

Locations

Three wildcat locations were included among 14 permits issued: Petroleum Exploration Co. No. 1 A. J. Cable, SE NE SE section 12-5n-2w; T. F. Caldwell, Inc., No. 1 Jennie Huston and Albert B. Lincoln, NW SW SW section 7-25n-1w, South Branch Township, Crawford County, and Terry-Dale Michigan Corp. No. 1 Dayton Higgins, SW NW NW section 10-9n-8w, Eureka Township, Montcalm County.

Central West

Operations in Central Ohio, Kentucky, Illinois, Indiana

By GEORGE A. WHITNEY

FINDLAY, Ohio, Apr. 20.—There has been more drilling activity the past week or so. The Lima field of northwestern Ohio will be given some new work. In Putnam County, Brown and others' test on the L. J. Wannamaker in Blanchard Township showed an initial of 70 bbls. the first 24 hours along with a light gas pressure, but was put on the pump. This showing should bring about more work in the vicinity. The oil was struck at a total depth of 1,355 feet and comes from the Trenton Lime field.

In Sandusky County, C. Breckheisen No. 2, section 18, Jackson Township, shows for around 8 bbls. initial with a light gas pressure, the oil being found at 1,355 feet. Montgomery & Co. is shut down on No. 1 H. F. Hetrick, section 7, Rice Township. Homer E. Keiser is drilling No. 17 Homer Russell, section 8, Jackson Township. F. F. O'Brien & Co. is drilling No. 1 Albert Coleman, section 15, same township. Klingberg and others are drilling No. 2 Edward Bowe, section 18, Scott Township.

In Ottawa County, Peninsula Oil Co. is drilling No. 1 James Ellithorp, section 25, Catawba Township.

In Hardin County, McCaubry & Co. is drilling No. 1 John B. Shedley heirs, section 11, Marion Township. Waltermire and others are getting ready to start a test on the J. H. Zeigler farm, section 18, Pleasants Township. Kenton Oil & Gas Co. is drilling No. 2 F. E. Hamilton, section 17, Pleasants Township.

In Ashland County, Ohio Fuel Gas Co. No. 1 D. S. Stine, section 5, Jackson Township, was dry and plugged at 2,871 feet. Same company is drilling No. 3 A. J. Stoner, section 3, same township.

In Lorain County, Ohio Fuel Gas Co. No. 1 John Kabalka, Lot 61, Columbia Township, is a gas well at 2,631 feet. Same company is drilling No. 1 A. S. Gibson, Lot 80, same township. Schneider & Wyles No. 1 E. P. Featherstone, section 6, same township, is a gas well at 2,508 feet, and same parties have a location on the McBride farm, section 25, Avon Township. Frank Meredith has a rig on the Rice & Rosencrans farm, Lot 104, Russia Township.

In Holmes County, Ohio Fuel Gas Co. No. 1 Albert Burkey, Lot 10, Richland Township, is a gas well.

In Richland County, Ohio Fuel Gas Co. is drilling No. 2 L. C. Benedict, section 20, Worthington Township, and No. 2 W. C. Harris, section 25, same township.

In Tuscarawas County, J. N. Harper is drilling No. 1 Oscar Kohler, Lot 29, Sandy Township, and in Perry Township, Mike Hardwick is drilling No. 2 Larson B. Zimmerly, Lot 21.

In Hocking County, Murray City Oil & Gas Co. No. 11 W. W. Acker produced 3 bbls.

In Pike County, Dove Oil & Gas Co. No. 1 D. B. McGuire is a gas well.

In Stark County, White & Lyon No. 1 Charles Daugherty, section 1, Perry Township, is a gas well at 4,502 feet.

INDIANA FIELDS

In Daviess County, A. T. Spaulding No. 2 Saria Beck, NE NE section 8, Barr Township, produced 10 bbls. Mrs. Marion Graves struck a 5-bbl. producer on her fee property, same township. Sage & Oliphant are drilling No. 1 Paul Furhman, section 34, same township.

In Knox County, Oliphant & Sage No. 1 Ewing Emison was dry. W. M. Myers & Co. No. 1 Guy Shepard, section 13, Busseron Township, is dry.

In Perry County, Haney & Hol-

(Continued on Page 73)

Oklahoma Operations

By
DAL DALRYMPLE

THIRD WELL IN MOORE FIELD SHOWS AS LARGE PRODUCER

Importance of the Moore area of northern Cleveland County, Oklahoma, was increased considerably the past week when the third producer in the pool tapped the rich Wilcox pay. The new oiler, the Sinclair Prairie Oil Co. and others No. 1 Rice, NE NE NE section 28-10-2w, flowed 1,304 bbls. of oil in 7½ hours. During six hours of the test it produced 811 bbls. through tubing, remainder of the flow being through casing. Back pressure was 1,740 pounds. The well is one-half mile south of the discovery producer. Three offsets to the No. 1 Rice have been surveyed and work was due to start at once. There are three other active operations in the field. Sinclair Prairie Pipe Line Co. has started work on an oil line from its system in the south end of the Oklahoma City field to the Moore area.

Southwestern Oklahoma continued to hold interest as a result of the recent strike of the Gulf Oil Corp. in the Tipton area of Jackson County. Several new drilling deals were reported nearing completion and an active lease play was under way in southern Jackson County. Gulf Oil Corp. No. 4 Boucher, SE SW SW section 32-1n-19w, which discovered the new Cisco sand pay and started the new excitement in that area, has been allowed 15,000 bbls. discovery oil, and in one 16-hour period flowed 2,100 bbls. The well is being held back because pipe line capacity from the lease is only 90 bbls. hourly. Several other wells are drilling in the area, one of the new operations being the R. W. Deason No. 1 Rawls, SW NW NE section 26-1n-20w, about 2 miles south of production in the Altus field, which was to be a 3,000-foot or Cisco sand test.

In the Britton area of Oklahoma County, Sinclair Prairie Oil Co. and others No. 1 Corbett, NE NW NE section 17-13-3w, continues to increase production. Deepened from 6,685 feet to 6,690 feet, it flowed 210 bbls. of oil in 24 hours, with 20,000,000 feet of gas. This well, which once produced 1,005 bbls. in 21 hours, encountered salt water and has been plugged back and redrilled several times.

Work in the Capitol extension area of the Oklahoma City field continues at boom proportions, with many new tests starting each week. The latest complete tabulation of activity in the area showed 20 completions, 58 tests drilling, 33 tests that had completed derricks or were rigging up tools, and 68 other operations that were digging pits and cellars or were merely

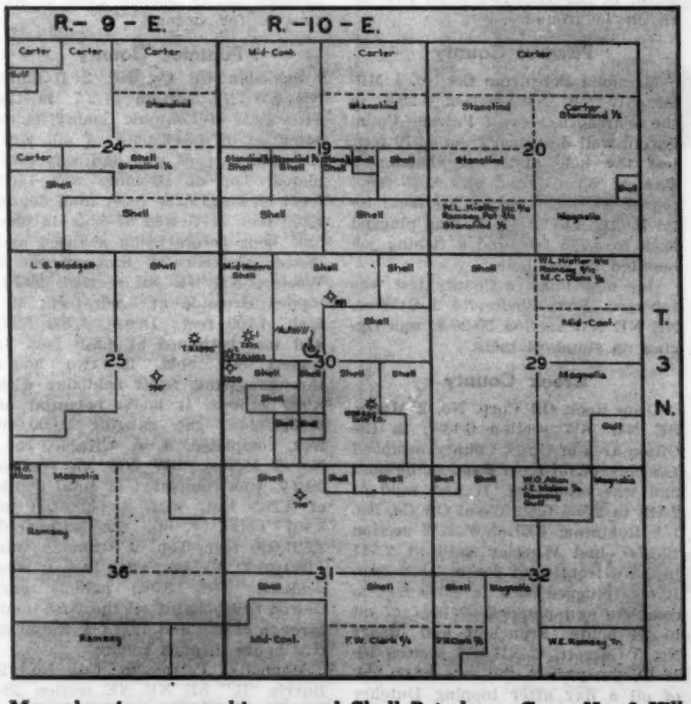
Oklahoma County

British American Oil Co. completed three additional producers in the Capitol extension of the Oklahoma City field. The No. 1 Roanoke, NE NE SE section 22-12-3w, flowed 4,893.98 bbls. of oil in six hours on potential test. Total for the last four hours was 3,522.67 bbls., giving it potential of 21,136.02 bbls. Second Wilcox sand was topped at 6,400 feet; total depth, 6,493 feet in sand. The No. 1 Powell, NE NE SE section 22-12-3w, topped second Wilcox sand at 6,380 feet; total depth, 6,462 feet in sand. It flowed 3,137 bbls. in the last four hours of a six-hour test to give it potential of 18,984 bbls. of oil. Flow for the six hours totaled 4,695 bbls. Gas gauged 13,000,000 feet. The No. 1 Winders, SE SW SW section 23-12-3w, made potential of 9,825 bbls., with 11,100,000 feet of gas. Wilcox sand was topped at 6,336 feet and based at 6,509 feet, which was top of green shale; total depth, 6,518 feet. It flowed 2,354.01 bbls. in six hours of test, flow for the last four hours being 1,637.53 bbls.

The new work in Oklahoma County included the first operations to be started on state-owned land in the Capitol extension area at Oklahoma City. Sunray Oil Co. started the following tests on the state property it leased: No. 1 State, NE cor. section 27-12-3w, rig; No. 2 State, C E half NW NE NE section 27-12-3w, cellar and rig on grounds; No. 3 State, NE NE NW NE section 27-12-3w, cellar; No. 4 State, N half NE NW NE section 27-12-3w, rig; No. 5 State, NW NE NE NW section 27-12-3w, rig.

Other new work in Oklahoma County, all in the city field: Barnsdall Oil Co. No. 1 Oklahoma Heights, NE SE SW SE section 15-12-3w, digging cellar; same operator's No. 2 Oklahoma Heights, N half SE SW SE section 15-12-3w, digging cellar; Phillips Petroleum Co. No. 1 Stiles Community, N half NW NE NE section 34-12-3w, digging cellar; their No. 2 Stiles Community, N half NW NW NE section 34-12-3w, cementing cellar; their No. 3 Stiles Community, NE NE NW NE section 34-12-3w, digging cellar; same operators' No. 1 Morey, SW NE NW section 26-12-3w, location; their No. 1 Meadors, E half NE NW NW section 26-12-3w, digging cellar; same operators' No. 1 Gast Heights, C W half NW SW NW section 26-12-3w, cellar; their No. 2 Gast Heights, NW SW SW NW section 26-12-3w, cellar; same operators' No. 1 Glen Ellyn, NW NE NW NW section 26-12-3w, cellar; their No. 2 Glen Ellyn, NW SE NW NW section 26-12-3w, digging cellar; Anderson-Prichard Oil Co. No. 1 Jackson, NW NE SW NW section 22-12-3w, digging cellar; same operators' No. 2 Proffitt, SE NE SW SE section 15-12-3w, Lots 43 and 44, cellar cemented; their No. 3 Proffitt, SE NE SW SE section 15-12-3w, Lot 2, cellar cemented; British-American Oil Co. No. 1 Gast Heights, SW SW SW NW section 26-12-3w, cellar; Stauffer Petroleum, F. C. Hall, Inc., and others No. 1 Villa, SE SE NE SW section 22-12-3w, digging cellar; Black Gold Petroleum Co. No. 1 White-Harris, SE NE SW SE section 15-12-3w, rigging up rotary; Fairfax Oil Corp. No. 3 Russell, SW NE SW SE section 15-12-3w, building rig.

British-American No. 2 Piersol, SE SE SE section 22-12-3w, flowed 6,301 bbls. of oil in six hours on potential test, producing 4,172 bbls. the last four hours to give it a daily potential of 25,031 bbls. It was bottomed at 6,484 feet, and was to be deepened.



Map showing ownership around Shell Petroleum Corp. No. 3 Hill, SE SE NW section 30-3-10, promising wildcat test in Coal County
(Mid-Continent Map Co., Tulsa)

Estimated Production

Estimated daily average production of Oklahoma for the week ending April 18 and for the preceding week is as follows:

	Barrels	
	Apr. 18	Apr. 11
Allen	7,900	6,700
Asher-West Asher	850	850
Burbank	7,300	7,300
South Burbank	14,500	14,750
Balance Osage	23,250	23,350
Blackwell	4,400	4,400
Bristow-Slick	8,125	8,200
Chandler	3,825	3,850
Crescent	5,250	5,500
Cromwell	3,600	3,600
Cushing-Shamrock	11,400	11,450
Duncan district	3,900	3,900
Edmond	12,925	13,275
Fish	10,900	19,500
Fitts	52,600	46,350
Gray	1,600	1,750
Graham	5,125	4,850
Healdton	8,850	8,825
Hewitt	4,425	4,425
Holdenville	1,100	1,100
Keokuk	7,200	5,275
Konawa	1,850	2,150
Lucien	12,675	12,750
Marshall-Lovell	1,000	1,000
Oklahoma City	162,600	153,800
Olympic	5,700	5,450
Papoose	1,050	1,050
Polo	3,725	3,650
Sasakwa and townsite	3,300	5,050
Sholem-Alechem	3,575	3,575
Seminole field:		
Bowlegs	14,225	13,475
Carr City	7,325	6,400
Earlsboro	7,575	7,575
South Earlsboro	1,000	1,100
East Earlsboro	11,150	11,325
Little River	13,275	13,475
East Little River	1,075	1,200
Maud	975	965
Mission	2,475	2,325
Seminole	11,550	11,475
East Seminole	1,950	1,700
Searight	6,425	4,575
Total Seminole	79,000	75,590
St. Louis-Pearson	24,650	24,225
Tatums	3,500	3,500
Tonkawa-Garber-Thomas	5,700	5,700
Wewoka	3,775	3,750
Yale-Jennings	4,075	4,075
Other pools	54,500	54,000
Total Oklahoma	569,700	549,715

Osage County

Kewanee Oil & Gas Co. No. 3 Hale, SE NE SE section 27-26-6, in the South Burbank area of Osage County, flowed 538 bbls. of oil in 24 hours by heads and was completed at 2,945 feet, total depth. Top of Bartlesville sand was 2,860 feet.

In the Naval Reserve area, Tide Water Oil Co. No. 2 Osage, SE SW NE section 9-24-7, flowed 473 bbls. of oil in 24 hours after a shot at 2,582-2,600 feet and was completed at that depth after plugging back from 2,625 feet, total depth. Bartlesville sand was topped at 2,553 feet. This well extends the Naval Reserve pool three-eighths mile north. Continental

Oil Co. No. 11 Osage, SE NE SE section 21-24-7, topped Bartlesville sand at 2,512 feet; total depth, 2,617 feet, and was completed after swabbing and flowing 95 bbls. in 24 hours following a 100-quart shot.

Ray Branstetter No. 2 Osage, NW SE SW section 28-22-11, flowed 240 bbls. in the first 24 hours after acidizing. It flowed 457 bbls. in the next three days, then quit flowing and was to be put on the pump. It topped Hominy sand at 2,016 feet; total depth, 2,084 feet, and flowed and swabbed 150 bbls. of oil before acidizing. Higgins & Cooper No. 3 Osage, NE SE SE section 26-21-10, was shot with 30 quarts at 1,968-82 feet, pumped 15 bbls. of oil in 24 hours and was completed. Burgess sand was topped at 1,968 feet; total depth, 1,982 feet. Harland Oil Co. No. 76 Osage, SW NE NW section 25-24-11, was completed as a repressure well at total depth of 1,736 feet in Bartlesville sand topped at 1,630 feet. Acid treatment failed to make a producer of it. E. O. Platter No. 5 Osage, NE SE NW section 30-22-9, failed to increase production by deepening to 514 feet and was plugged back to the original total depth of 432 feet. It is a 2-bbl. pumper.

New Osage County operations: Wynona Oil Co. No. 20 Osage, NW NW NE section 9-20-12, location; Lewis Production Co. and Continental Oil Co. No. 3 Ah-Kah-Ne, NW NE SE section 9-24-7, building rig; Champlin Refining Co. and others No. 1 Presbury, NW NE SE section 22-25-6, rig; Lewis Production Co. No. 2 Calahan, SW SE SW section 23-26-6, cellar; Skelly Oil Co. No. 3 Smith, SW NE NW section 26-26-6, location; Kewanee Oil & Gas Co. No. 4 Hale, SW NE SE section 27-26-6, location; Phillips Petroleum Co. No. 2 Sanson, SE SE NE section 27-26-6, cellar.

Carter Oil Co. No. 2 Mary Mosier, SE SE NW section 34-26-6, topped sand at 2,840 feet and was shot with 60 quarts at 2,906 to 2,922 feet, total depth. It swabbed as high as 87 bbls. in one day and was tubing to complete. Pure Oil Co. and others No. 103 Osage, in section 9-23-8, was acidized with 1,000 gallons and a 40-bbl. load and was testing. It was deepened from old total depth of 2,302 feet to 2,426 feet.

Okmulgee County

Klingensmith No. 4-A Adams, NW NE SW section 35-16-11, in northwestern Okmulgee County, was completed as an 8-bbl. pumper. It had Dutcher sand at 2,278 to 2,297 feet, drilled to 2,311 feet and plugged back to 2,297 feet. Vincent No. 1 Yarhola, SW SW NW section 18-13-11, produced 15,000,000 feet of gas daily from sand at 2,573-83 feet, and was completed. Aggis Drilling Co. No. 1-A Osborn, NE NE NW section 21-15-14, had sand at 1,667 to 1,701 feet and was abandoned at 1,720 feet, total depth. Misener No. 1-A Meyers, SW SE NE section 28-15-14, was shot with 80 quarts in sand at 633 to 656 feet, pumped 3 bbls. of oil daily and was completed.

Sinclair Prairie Oil Co. No. 3 Flanagan, NW cor. section 26-13-12, old well deepened from 2,862 feet to 3,074 feet, pumped 3 bbls. of oil a day. Geiger No. 1-A Colbert, CSL NW NW section 22-14-12, an old well, was deepened from 1,756 to 2,022 feet and abandoned.

The following new Okmulgee County work was reported: Gore No. 1-A Anderson, SE SW NE section 36-16-14, drilling below 620 feet; Downing No. 1-A Anderson, SE cor. section 36-16-14, drilling below 600 feet; Klingensmith No. 14 Farr, SW NE NW section 36-16-11, old well being deepened, drilling below 2,330 feet; Stroxier No. 1-A Pence, C NW SW section 21-16-11, location; Aggis Drilling Co. No. 1-B McKinney, C SW NW section 16-15-14, location; W. B. Pine No. 1-A Beams, C S half NE section 4-15-14, drilling below 730 feet; Turner and others No. 3 Chamberlain, SE SW SE section 35-15-12, had sand at 1,550-87 feet, was shot and shut down; Oklahoma Oil Co. No. 1 Burgess, SE SW NE section 26-12-12, old well being deepened, shut down at 2,393 feet; Stekoll No. 11 Hawkins, NE NE SE section 6-11-12, location.

Tulsa County

Anthony No. 4 fee, SW SW NW section 3-16-12, in the southwestern corner of Tulsa County, was deepened from old total depth of 1,700 feet to 1,895 feet, produced 500,000 feet of gas and was completed.

Two new operations were reported. Sand Springs Home No. 1 Thlacco, SW SE NW section 2-19-11, topped Mississippi at 1,960 feet and was drilling below 2,175 feet; Whitten No. 1 Fulsom, SW SW NE section 24-19-11, was drilling below 420 feet.

Kay County

Argo Oil Co. No. 1 Myers, NE SW SW SW section 20-25-1w, in the Tonkawa area of Kay County, swabbed 20 bbls. of oil and 35 bbls. of water after acid treatment and was completed. It had Mississippi lime at 4,260 to 4,362 feet; Wilcox sand at 4,430 feet; total depth, 4,490 feet in sand, and plugged back to 4,260 feet, and cleaned out to 4,290 feet.

Noble County

One new operation in Noble County was reported. Shell Petroleum Corp. No. 1-A Murray, SW SE SW section 10-24-1w, in the Noble County sector of the Tonkawa field, had the rig on the ground.

Pawnee County

Magnolia Petroleum Co. No. 1 Miller, SW NW NW section 4-22-3, in the Watchorn area of Pawnee County, old well deepened from 4,076 feet, lost the hole and was abandoned. Base of Wilcox sand was 4,085 feet; top of Arbuckle lime, 4,208 feet; total depth, 4,311 feet. It was plugged back to 3,235 feet and a fishing job resulted in lost hole.

One new Pawnee County test was reported. Jerry Sheltz No. 1 Grieves, NE NE NW section 30-20-8, was rigging up standard tools.

Creek County

Deep Rock Oil Corp. No. 2 Marrs, SE NW SW section 6-18-7, in the Oilton area of Creek County, swabbed 148 bbls. of oil from Bartlesville sand and was completed. It had sand at 2,518 to 2,565 feet. Wood Oil Co. No. 1-A Robinson, CEL NW NW section 12-17-6, had Wheeler sand at 2,341 to 2,376 feet; total depth, 2,890 feet. It was plugged back to 2,380 feet to complete and pumped 62 bbls. of oil in 24 hours. Franchott and others No. 5 Garrett, C NE SW section 16-16-10, pumped at the rate of 1 bbl. of oil a day after topping Dutcher sand at 2,898 feet and drilling to 2,932 feet. Wasson & McNamara No. 1 Posey, SE SW SW section 22-18-9, was dry and abandoned in Wilcox sand at 3,085 to 3,104 feet.

Two old Creek County wells were deepened. Sinclair Prairie Oil Co. No. 9 Long, NE SW SW section 9-18-7, topped Simpson sand at 2,751 feet, total depth 2,761 feet, plugged back to 2,726 feet, was acidized and pumped 5 bbls. daily. Old total depth was 2,573 feet. Same operators No. 4 Litchfield, NW NW NE section 21-17-7, pumped at the rate of 15 bbls. of oil daily after deepening from 2,687 feet. It topped Simpson sand at 2,806 feet, total depth 2,915 feet.

New work in Creek County was as follows: Sinclair Prairie Oil Co. No. 1 Gilcrease, SW SW SE section 33-17-12, old well cleaning out to deepen; F. O. Akin No. 13 Wilson, C NW SE section 34-18-8, old well deepening from 1,315 feet, drilling at 1,385 feet; Kirchner and others No. 2 Fry, SE NE SE section 14-17-8, old well, preparing to deepen.

Muskogee County

Foltz No. 2 Barnett, SW SW NE section 17-14-17, in the Beland area of Muskogee County, swabbed 98 bbls. of oil in 24 hours after acid treatment. It had sand at 1,878 to 1,894 feet, completed. Goldport and others No. 1 Bartholet, SE SW NW section 17-14-17, topped Hunton lime at 2,113 feet, and was dry and abandoned at 2,460 feet, total depth. Mussellum No. 1 Bartlett, SE NW NE section 17-14-17, had Wilcox sand at 1,988 to 2,019 feet, and was dry and abandoned at 2,060 feet, total depth.

Cleveland County

Stauffer Petroleum Co. and others No. 1 Bruce, NE SE NE section 20-10-2w, in the Moore area of northern Cleveland County, was digging cellar and pits.

Sinclair Prairie Oil Co. and others No. 1 Marvel, NW SW NE section 21-10-2w, the second producer in the Moore area, ran tubing to 6,918 feet and, when opened into the pits, cleaned itself and flowed 630 bbls. of oil in 26 minutes through casing. After making additional flows through partly opened gate, it was shut in for storage.

Pontotoc County

Samedan Oil Co. No. 2 Holkum, NE SW NE section 27-2-7, in the Fitts field of Pontotoc County, made potential of 4,344 bbls. of oil, with 1,831,000 feet of gas, and was completed. Top of Bromide was 4,024 feet; McLish, 4,230 feet; total depth, 4,265 feet. It flowed 85 bbls. in one-half hour before being acidized and tested. Fleetborn & Simpson No. 5 Wooley, NE NE SE section 28-2-7, topped Bromide at 3,880 feet; McLish, 4,100 feet; Dense, 4,260 feet, and was bottomed at 4,270 feet. It flowed 300 bbls. in two hours through casing. After acidizing with 8,000 gallons, it made potential of 3,849 bbls., gas gauging 2,600,000 feet, completed. J. E. Crosbie, Inc., No. 1 McKoy, SW NE NE section 28-2-7, was completed at total depth of 4,293 feet, with a potential of 3,497 bbls. of oil. Gas measured 3,521,000 feet. Top of Bromide was 4,030 feet; McLish, 4,240 feet. It was acidized with 5,000 gallons and flowed 610 bbls. of oil the first hour through casing and 727 bbls. the next five hours through tubing.

Magnolia Petroleum Co. No. 2 Burris "B," SE NE NE section 28-2-7, topped Bromide at 4,060 feet; McLish, 4,270 feet; total depth, 4,300 feet, completed. It was acidized and flowed 115 bbls. of oil the first hour and 132 bbls. the second hour through tubing. It made potential of 2,004 bbls., with 1,446,000 feet of gas. E. H. Moore and others No. 6 Wirick, NE NE SW section 29-2-7, an old producer, was deepened from 4,309 feet to 4,410 feet and made potential of 3,556 bbls. of oil.

Mid-Texas Petroleum Co. No. 1 Whitney, SW SW SE section 30-5-4, wildcat in northwestern Pontotoc County, pumped 50 bbls. of oil in 24 hours and was completed. Lime was topped at 1,908 feet; total depth, 1,946 feet.

New work in Pontotoc County was as follows: Magnolia Petroleum Co. No. 5 Metropolitan Life, SE NW NE section 27-2-7, cellar and pits; same operator's No. 6 Metropolitan Life, NW NE NE section 27-2-7, building rig; No. 7 Metropolitan Life, SW NE NE section 27-2-7, location; No. 8 Metropolitan Life, SE cor. section 22-2-7, building rig; Simpson-Feld & Westheimer No. 1 Westheimer, SE NE NE section 27-2-7, cellar and pits; Fleetborn Oil Corp. No. 7 Woolley, SE NE SE section 28-2-7, rig; E. H. Moore and others No. 2-A Patrick, NE NW NE section 31-2-7, rig. Sinclair Prairie Oil Co. No. 10 Rolls, NW NW NE SW section 28-5-8, location.

Fleetborn Oil Corp. No. 2 J. Norris, SW NW NE section 25-2-6, flowed 270 bbls. of oil in five hours through tubing, after acidizing with 8,000 gallons. It was bottomed at 4,450 feet, but was not completed. Blackstock & Deaner No. 1 Moody, NE cor. section 27-2-7, flowed 1,064 bbls. of oil through casing in one hour and 54 minutes after acidizing with 10,000 gallons. Total depth was 4,270 feet. J. E. Crosbie, Inc., No. 3 Burris, SW SE NW section 27-2-7, was treated with 5,000 gallons of acid and flowed 662 bbls. of oil through casing in six hours and 287 bbls. in four hours through tubing. It was reacidized with 8,000 gallons and flowed 733 bbls. through tubing in four hours. It was bottomed at 4,290 feet. E. H. Moore and others No. 8 Harper, NE NW NE section 29-2-7, drilled to 3,785 feet in Sylvan shale topped at 3,765 feet, and after acid treatment flowed 354 bbls. of oil in two hours. Hunton lime was topped at 3,469 feet.

In the Jesse area of Pontotoc County, Continental Oil Co. No. 1 Alva James, NE NE SW section 12-1-7, drilled to 4,743 feet, total depth, and flowed 1,800 bbls. of oil in 14 hours through drill pipe. It was acidized with 5,000 gallons and flowed 1,500 bbls. of oil in 14 hours through drill pipe.

Hughes County

Mid-Continent Petroleum Corp. No. 2 Hampton, NW SW NE section 1-9-8, in the Olympic area of northwestern Hughes County, flowed 371 bbls. of oil through casing in 21 hours and was completed. Senora sand was topped at 1,655 feet; total depth, 1,707 feet. Same operator's No. 3 Hampton, NE NW NE section 1-9-8, topped Senora sand at 1,707 feet and was bottomed at 1,740 feet. After a 40-quart shot, it flowed 318 bbls. of oil in 24 hours and was completed. Sinclair Prairie Oil Co. No. 8 Oliphant, NE NW SE section 1-9-8, was completed after flowing 305 bbls. in 24 hours following a shot with 60 quarts. Top of Senora sand was 1,650 feet; total depth, 1,714 feet. George Manahan and others No. 2 Tucker, NE SE SE section 2-

9-8, encountered Senora sand at 1,722 feet and was bottomed at 1,757 feet. After a shot with 40 quarts, it flowed 117 bbls. in 24 hours and was completed.

W. P. Canavan No. 1 Meadors, SE NE SE section 5-8-10, southwest of Wetumka, flowed 20 bbls. of oil in 24 hours, with gas gauging 6,000,000 feet, and was completed. It topped Cromwell sand at 3,058 feet, drilled to 3,196 feet and plugged back to 3,168 feet. L. A. Schumacher and others No. 1 Schumacher, NE NW NE section 23-5-10, wildcat in southern Hughes County, was dry and abandoned at 1,782 feet, total depth. It topped first sand at 135 feet, and had several sands at various levels, but they carried no oil.

New work in Hughes County was as follows: George Manahan and others No. 3 Oliphant "E," SW SE NW section 1-9-8, set 10-inch casing at 43 feet, waiting; Carter Oil Co. No. 5 Hampton, SE SE NE section 1-9-8, location; J. A. Chapman No. 2 fee, NE NE NW section 1-9-8, spudded; Mid-Continent Petroleum Corp. No. 7 Hampton, SE NW NE section 1-9-8, set 10-inch casing at 51 feet, waiting; Harman Oil Co. No. 1-A Simon, NE NE NW section 9-9-9, moving in machine; Kingwood and Phillips Petroleum Co. No. 7 Rogers, C E half SW SW section 3-9-9, rigging up machine; Blackwell Oil & Gas Co. No. 1 Long, SE NE NW section 29-9-9, location.

Pottawatomie County

Only one completion was reported in Pottawatomie County and it was an old well deepened. Conley Drilling Co. No. 1 Vinson, NE cor. section 13-7-4, in the St. Louis district, was deepened from 3,971 feet to 4,051 feet and flowed 1,600 bbls. of oil in 24 hours. Wilcox sand was topped at 4,039 feet.

New work in Pottawatomie County: Conley Drilling Co. No. 2 Vinson, SW NE NE section 13-7-4, old well, rigging up to deepen; same operator's No. 3 Vinson, SE NE NE section 13-7-4, cellar and pits; Producers, Inc., No. 2 Cardwell, SE SW NE section 15-7-4, rig; M. & K. Drilling Co. No. 1-A J. Floyd, SW SW SE section 22-7-4, rig on ground.

Seminole County

Sinclair Prairie Oil Co. No. 2 L. Harjo, NW SE NE section 12-5-7, in the Seminole County sector of the Allen pool, topped Wilcox sand at 4,235 feet and was completed at 4,253 feet, total depth. It swabbed and flowed 1,352 bbls. of oil in 15 hours, and later flowed and swabbed 1,605 bbls. in 24 hours.

Pioneer Drilling Co. No. 1 Reed, SW SW SE section 27-8-8, swabbed 720 bbls. in 24 hours and was completed. Top of Wilcox sand was 4,190 feet; total depth, 4,210 feet. Exchange Drilling Co. No. 1-A D. Harjo, C SE SW section 25-9-6, swabbed 90 bbls. of oil net in 24 hours and was completed at 4,019 feet, total depth. It was acidized with 4,000 gallons. Production was from Hunton lime, topped at 4,000 feet. Carter Oil Co. No. 3 Bruner 32-C, C W half NW NE section 19-10-6, had top of Simpson formation at 4,550 feet; Wilcox sand, 4,588 feet and was completed at 4,596 feet, total depth. It swabbed 222 bbls. of oil in 10 hours and later swabbed 276 bbls. in 15 hours. Carter Oil Co. and others No. 1 Bruner 28-C, C N half NW SW section 2-10-6, made potential of 2,000 bbls. of oil and was completed as a Hunton lime producer at 4,156 feet. total depth. The lime was topped at 4,150 feet. It flowed 285 bbls. of oil the first three hours through casing, and then flowed 75 bbls. in one hour through 1-inch choke.

The following new operations in Seminole County were reported: Wood Oil Co. No. 1 A. Harjo, SE SW NW section 12-5-7, rig; Fleetborn Oil Corp. No. 1 Fleet, SW SW NE section 12-5-7, spudded; Sinclair Prairie Oil Co. No. 1 W. Rogers, NW NE SE section 12-5-7, building rig; Exchange Drilling Co. No. 1-A Fixico, C SE NE section 23-9-6, location; Uscan Oil Co. No. 2 Oliver, NE SE NE SW section 28-9-6, drilling at 3,113 feet; Hilton Phillips and others No. 1 Fixico, C E half NE NE section 13-10-5, building rig.

Okfuskee County

Amerada Petroleum Corp. and the Stanolind Oil & Gas Co. No. 1 Carolina, SW cor. section 31-10-9, in the Okfuskee County extension of the Olympic area, flowed 253 bbls. of oil in 24 hours through tubing and was completed. It topped Senora sand at 1,705 feet; total depth, 1,758 feet.

In the Dill district, Ralvern Oil Co. No. 1 Hicks, C NW SE section 11-11-8, flowed 90 bbls. of oil in five hours through one-half inch tubing choke after acidizing and was completed. Hunton lime, the producing formation, was topped at 3,936 feet: total depth, 3,941 feet. J. J. O'Loughlin No. 2 Keys, C N half NE SW section 11-11-8, topped Hunton lime at 3,946 feet and drilled to 3,969 feet, total depth. It was acidized, flowed 343 bbls. of oil gross in 17 hours and was completed.

New operations in Okfuskee County were as follows: George Manahan and others No. 4 Dalton, NW SE SE section 36-10-8, rigging up rotary; Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 2 Carolina, NW SW SW section 31-10-9, location; W. B. Wells No. 2 Clark, C NW NW section 11-10-11, spudded; Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 Wells, SW SW NW section 7-11-7, wildcat, cellar and pits; Ralvern Oil Co. No. 1 Keys, C SE NW section 11-11-8, rig; Snyder Drilling Co. No. 7 Wind, NW SW NE section 35-11-9, location; Roy Suppes No. 1-A Alexander, C S half NW NE section 35-11-9, location.

Lincoln County

No completions were reported in Lincoln County and there was only one new operation. Stanolind Oil & Gas Co., Amerada Petroleum Corp. and Slick-Urschel Oil Co. No. 8 Rice, NW NW NE section 11-14-3, was a location.

McIntosh County

Phillips Petroleum Co. No. 1 in NE NE NW section 3-9-13, northwest of Raiford in western McIntosh County, was digging cellar.

Atoka County

Riverland Oil & Gas Co. No. 1 Jones, SW SW NE section 4-3s-9, was moving in material. Location of this test is in western Atoka County, northwest of Boggy Depot.

Carter County

Cox & Hamon No. 1 Mena, NE NW SE section 6-2s-2w, in the Wildcat Jim area of Carter County, flowed 119 bbls. of oil in the first 24 hours; 87½ bbls. the next 24

(Continued on Page 73)

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A HEALTHY pressure or none, must be the aim in some uses of gas. It may be that a well needs to be protected from depletion, or that gas needs to be kept at higher pressure in one part of a line or system than in other parts. Set the *Fulton Back-Pressure or Check-Pressure Regulator* for any desired minimum, and gas will flow only while pressure on the inlet side remains above that minimum. When pressure drops it will no longer hold the valve open against the weights imposed; and therefore flow ceases. Descriptive Bulletin No. 2099 furnished on request.

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CASS COUNTY, TEXAS, AREA ATTRACTING NEW ACTIVITY

By J. R. CRUMPTON

SHREVEPORT, La., Apr. 20.—The week's developments in the Rodessa field indicate that the Cass County, Texas, area on the southwest trend will match operations with the more developed parts of the field to the northeast in Caddo Parish, Louisiana. Since completion of American Liberty Oil Co. No. 1 D. A. Maxie, John Collum Survey, which extended production a mile west, there is a pronounced pickup in locations and rigs getting under active way. Strange as it may seem, the area in the immediate vicinity of the Young discovery well has had less drilling than many other parts of the field to the northeast. This is due to a great extent to the fact that the second producer was immediately completed more than a mile north and east and the small lease tracts held by different operators in that area. Section 14-23-16 has been the hot spot for drilling, but later extensions of production over into Range 15, several miles northeast, caused intensive drilling around each of the new extension producers. The Rodessa townsite is also a beehive of activity but results of several tests within the town limits indicate a large part of it is too far on the updip toward the gas trend. The wells drilling in the town area will in all probability prove the oil producing lines.

Northeast Completions

Two of the northeastern completions failed to come up to expectations. Bartex Pipe Line Co. No. 2 Robinson, C of W half of NW of SW of section 17-23-15, perforated casing from 6,025-29 feet with the total depth at 6,057 feet. It flowed only 11 bbls. per hour through one-sixteenth inch tubing choke, registering 975 pounds pressure. It had previously tested 50 bbls. for three hours and stopped flowing. M. H. Marr No. 3 Hunter, section 13-23-16, made 14 bbls. per hour through one-fourth inch tubing choke from 6,047 feet, tubing pressure registering 1,700 pounds and casing pressure 1,950 pounds. Top of saturation was logged at 6,001 feet. R. W. Norton No. 1 J. Elder unit, NE cor. of section 23-23-16, flowed 16 bbls. per hour through one-quarter inch choke on tubing from 6,045 feet. Haynes Production Co. completed two good wells. Its No. 4 Otwell, section 15-23-16, flowed 130 bbls. per hour on 1½-inch choke on tubing from 6,004 feet. Top of Young sand was logged at 5,984 feet. No. 2-B Pitts, section 12-23-16, made 80 bbls. per hour through 1½-inch tubing choke from 6,033 feet. United Gas Public Service Co. No. 11 Rodessa Oil & Land Co., section 23-23-16, is a 42-bbl. per hour producer on one-half inch tubing choke from 6,013 feet. Top of saturation was logged at 5,988 feet, tubing pressure registering 500 pounds and casing pressure 750 pounds.

Cass County Test

American Liberty Oil Co. No. 1 Marcus Rembo, J. H. Reeves Survey, is being closely watched as a possible extension to the southwest in Cass County. Top of anhydrites logged at 5,008 feet indicates that the test may make a producer, in which case it would be about a 5-mile extension. The same operator's No. 2 Maxie has spudded in, set 16-inch casing at 226 feet and drilling at 1,520 feet. No. 3 Maxie is rigging up. Both tests are in the John Collum Survey, offsetting their No. 1 Maxie. McIlvane and others are rigging up on No. 1 Beckett, John Collum Survey. D. W. Norton No. 2 Mary Rives, John Collum Survey, is drilling at 5,611 feet, and he is rigging up on No. 2 Haywood, Priscilla Evans Survey.

Bartex Pipe Line Co. No. 1 Robinson, section 18-23-15, may be the first test started in the Rodessa field and abandoned as incompleted. The crew has been fishing for drill stem for more than a month with the hole bottomed at 6,028 feet. Top of saturated lime was logged at 5,998 feet. United Gas Public Service Co. No. 2 M. L. Pitts, section 13-23-16, is also having trouble completing as a producer. The well tested 10,000,000 feet of gas through one-half inch tubing choke from 6,013 feet, was killed and a short string of 5-inch casing is being run for further testing.

North Louisiana Wildcats

None of the deep wildcats scattered over a wide area in the North Louisiana district developed anything of interest. United Gas Public Service Co. No. 2 Durrett, section 31-20-5, in the Sugar Creek field of Claiborne Parish, developed 32 thribbles of salt water on drill stem test from 5,870 to 5,991 feet and cored red shale with streaks of sand at 6,133 feet. In De Soto Parish, Larkin & Waar No. 1 Jackson, section 1-11-14, topped Nacatoch sand at 1,215 feet, top of chalk rock at 1,970 feet and is drilling in shale and lime at 4,433 feet. The test is in the old Spider area. S. S. Alexander No. 1 J. R. Stell, section 5-12-16, in the Logansport area on the western edge of De Soto Parish, is drilling in shale at 6,002 feet. Arkansas-Louisiana Gas Co. No. 1 C. E. Causey, section 32-19-2w, Lincoln Parish, is in sandy shale and lime at 4,632 feet and should hit the expected pay horizon during the coming week. A. H. Tarver No. 2 Baker, section 36-8-12, Zwolle area of Sabine Parish, still has drill stem stuck 1,400 feet off bottom, estimated depth at 5,200 feet. The well is being drilled "tight."

The completion of the large saturated gasser last week in Bienville Parish, southwest of the Lincoln gas area, has added new activity to leasing and blocking in Northwest Louisiana. A reported transfer of a large block by Leslie Hammer to a major company was current. The acreage is in the vicinity of Gibsland in the northwestern part of Bienville Parish and has been looked upon as structurally high for Blossom production. Geophysical surveys have also been made in that particular area. A structure about 7 miles north of the town of Minden, Webster Parish, has been getting a good play, leases selling from $5 to $15 per acre. A number of seismograph and torsion balance crews have worked the block.

This district reported six other completions in addition to those in Rodessa. Taw Oil Co. No. 1 Long, section 9-9-1e, Grant Parish, was dry and abandoned at 1,575 feet. It is one of a series of shallow tests being drilled in that area. The Converse field, Sabine Parish, had one good and one small producer. J. E. Daughtie, trustee, No. 3 Edwards, section 29-9-13, is making 270 bbls. daily from 1,700 feet and Posey Sisters Oil Co. No. 2 Burkett, section 10-9-13, is a 5-bbl. pumper from 1,973 feet. Three gassers were completed in the Morehouse-Union Parish area of Monroe field. In the former United Gas Public Service Co. No. 33 Crossett, section 34-21-4e, gauged 5,000,000 feet, 780 pounds rock pressure from 2,145 feet. Its No. 1 Tensas, section 5-21-4e, had initial flow of 7,000,000 feet, 860 pounds rock pressure from 2,148 feet. In Union Parish, Interstate Natural Gas Co. No. 46 fee, section 25-20-3e, was a 6,000,000-foot gasser from 2,161 feet. Rock pressure registered 735 pounds.

ARKANSAS

Joe Modisett No. 1 Red River Lumber Co., section 21-19-24, Lafayette County, will be one of the deep wildcats to be closely watched during the week. The test logged base of massive anhydrites at 5,260 feet, set 7-inch casing at 5,300 feet with the hole bottomed at 5,310 feet. The test is south and east of the old Bradley field. Erwin & Leach No. 3 Bodcaw Lumber Co., section 20-16-23, near the town of Stamps, is drilling in shale at 5,726 feet. A shallow test in Hempstead County, Fitzwater and others No. 2 Lafferty, formerly reported as F. W. Martin, section 17-14-24, tested salt water at 2,047 feet. Seven-inch casing was set for the test of a reported core of 8 feet of sand.

J. C. Buckbee, trustee, El Dorado operator, has made location for No. 1 Wilson, section 17-17-18, Columbia County. It is not known at this writing the size of block, contract depth of well or whether it is located on a geophysical high. A flank well in the Miller County area, C. V. Lenz No. 7 Dale, section 24-15-16, developed a small show of oil on drill stem test from 2,838-40 feet and the test is coring ahead.

Phillips Petroleum Co. No. 1 J. D. Reynolds, section 27-15-15, Ouachita County, on the flank of the Smackover field, has set 9⅝-inch casing at 4,892 feet with the corrected total depth at 4,908 feet. In the same county, J. D. Reynolds No. 1 McKenzie, section 36-15-16, is fishing for cable tools at 1,970 feet, and L. L. McDonald No. 1 Langley, section 19-15-15, is coring hard shale at 2,016 feet. J. C. Buckbee, trustee, No. 1 H. Ezzell, section 13-17-15, Union County, is skidding over to start new hole after junking No. 1 at 3,572 feet. In Dallas County, Kel-Mac Lease & Royalty Co., section 26-10-16, is drilling in hard shale and sand at 1,112 feet.

Estimated Production

Estimated daily gross production all companies week ending April 17, 1936:

NORTH LOUISIANA

Believue	420
Caddo Light	4,055
Caddo Heavy	2,455
Converse	1,100
Cotton Valley	420
De Soto and Red River	1,280
Elm Grove	460
Haynesville	3,400
Holly	130
Homer	2,660
Pleasant Hill	165
Rodessa	44,995
Sarepta-Carterville	480
Urania	2,785
Zwolle	1,345
Total	66,150

SOUTH ARKANSAS

Champagnolle	3,300
El Dorado	2,065
Lisbon	295
Miller County	1,045
Nevada	855
Smackover Light	2,110
Smackover Heavy	17,705
Stephens	560
Urbana	2,025
Total	29,960

Texas side Rodessa field, 1,870 bbls. daily.

Standard of B. C. Expands

EDMONTON, Alberta, Apr. 18.—Standard Oil Co. of British Columbia, Ltd., which last year built a storage tank depot here, is planning to erect a chain of 10 or 12 five-pump complete service filling stations in Edmonton at an estimated cost of $40,000 each.

British American Oil

TORONTO, Ontario, Apr. 18.—Shareholders of the British-American Oil Co. at their annual meeting recently elected the following officers: President, A. L. Ellsworth; vice presidents, C. L. Suhr and F. A. Gaby; secretary, P. W. Binns; treasurer, J. C. Millar; directors, G. W. Allan, C. P. Beaubien, P. W. Binns, A. L. Ellsworth, F. A. Gaby, H. McSweeney, J. C. Millar, J. Y. Murdock, A. B. Purvis and C. L. Suhr.

West and North Texas

By
L. E. BREDBERG

ENCOUNTER SULFUR WATER IN TWO INTERESTING TESTS

FORT WORTH, Tex., Apr. 20. — Striking sulfur water in an interesting wildcat in Glasscock County, important extension to Means field in Andrews County and abandonment of two important outpost tests with a wildcat in Winkler County showing for a sulfur water well, were the features in the Permian Basin.

In Winkler County, Magnolia Petroleum Co. No. 1 State-Walton, SE section 7, Block B-3, P.S.L. Survey, previously plugged back from 3,695 feet to 3,500 feet to shut off water and shoot and acidize, showed for a sulfur water well after first reported a producer. It was treated with 3,000 gallons of acid using an oil load. It made a flow, the oil load with the water, 76 bbls. of oil and 138 bbls. of acid water, first thought as fresh oil and the well sure of making an oil producer. It then started making practically all sulfur water with 5,000,000 feet of gas, causing hopes to fade for acreage between the Keystone pool on the east and the Sayre-Howe pool on the west, the well being about midway between them and 3½ miles north of Kermit. The nearest Keystone producer is in section 8, about 1 mile east, and the Sayre-Howe production about 2 miles west. It will probably be plugged back further.

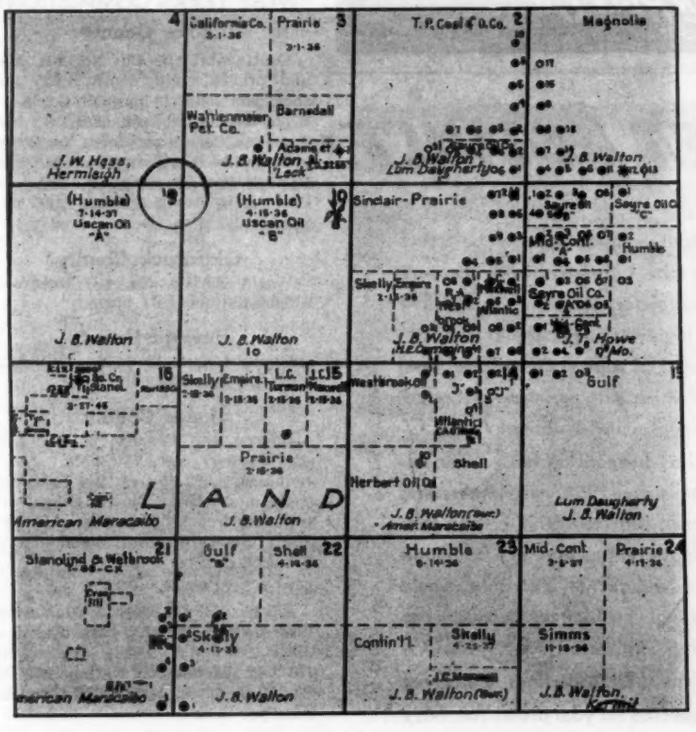
Sun Oil Co. abandoned No. 1 Keystone, SE cor section 3, Block 77, about 1 mile northwest of the nearest producer in the Keystone field and the same distance southeast of the nearest producer in the Scarborough area, at a total depth of 4,043 feet. Elevation is 2,968 feet. This seems to preclude probablity of these areas linking with production in northern Winkler County.

Another failure in the eastern part of Winkler County was J. C. Maxwell and Slosi Oil Co. No. 1 State-Walton, SW section 27, Block B-3, east of the Kermit townsite. It was given up as dry at a total depth of 3,245 feet helping to define the eastern limits of the Kermit or Brown and Altman producing area running parallel to the east of the old Hendricks lime field.

Wahlenmaier Petroleum Co. will probably complete No. 1-A Walton, SW section 34, Block 74, P.S.L. Survey, Winkler County, as a gasser at 2,883 feet. It is about 2 miles northwest of the Sayre-Howe area and a little over a mile north of a good oil producer brought in last week in section 9. Atlantic Oil Producing Co. is interested. Humble Oil & Refining Co. has made a location northwest, same quarter.

Tubbs Area—Crane County

Sinclair Prairie Oil Co. No. 1 Tubbs-Community, in which several companies have an interest, in section 3, Block B-27, western Crane County, in the Tubbs or San Hills pool where production has been found at three different levels, including the Ordovician, below 6,300 feet, promises the opening of another pay horizon. Between 3,687-98 feet the well picked up 11 feet of saturated lime and blew out at the top of the saturated streak. It was immediately brought under control and the crews prepared to make a drill stem test. This well was previously completed for a small pumper of 5 bbls. per day at 3,164 feet to validate leases, but after Humble Oil & Refining Co. completed a good well southeast at around 4,300 feet, it was decided to carry this test down in quest of the same formation and if not making a producer to go down in quest of the Ellenburger, the Ordovician section from which Gulf Oil Corp. has a producer to the northwest.



Showing location of good well which makes important extension in northern Winkler County, West Texas

(Map courtesy Zingery Oil Map Co., Fort Worth, Tex.)

Andrews County

Humble Oil & Refining Co.'s test in the SE quarter of section 13, Block A-20, P.S.L. Survey, 1½ miles northwest of the Means pool in northeast Andrews County, is expected to make some kind of a producer and an extension as it has cored several saturated streaks showing oil. Total depth is 4,521 feet in lime, saturated streaks having been logged between 4,498 feet and total depth. Seven-inch casing was set at 4,250 feet and the plug is being drilled. The test is running lower than other wells.

Glasscock Wildcat

Last week a showing of oil was reported in Fleetborn Oil Corp. No. 1 Floyd C. Dobson, section 13, Block 34, Township 3s, T.&P. Survey, extreme wildcat north of Garden City and south of the old World or McDowell pool in Glasscock County. This week the test struck sulfur water at 2,795-2,835 feet, but the 2,000 feet of water was shut off by running 7-inch casing to 2,850 feet and the test is drilling below 2,875 feet.

Schleicher Gas Showing

Magnus Oil Co. No. 1 Judkins and Spencer, Ordovician test in the W. W. Russell Grantee Survey, northeast of Eldorado in Schleicher County, drilled 2 feet of gas sand between 4,956-58 feet this week, but is now down around 5,100 feet.

Abandonment

Greencliff Oil Corp. No. 1 J. H. Tippett, NE quarter section 58, Block Y, T.C.R.R. Survey, 8 miles northwest of Rankin in wildcat territory in Upton County, was ordered abandoned after striking sulfur water at 4,370 feet. It ran low, logging top of the lime at 4,280 feet.

Yoakum Discovery

Cascade and Honolulu Oil Corp. No. 1 Bennett, in section 678, John H. Gibson Survey, southeast Yoakum County discovery, has run tubing preparatory to making a test after shooting. It is estimated good for 300 bbls. or more per day as is, but will be acidized. Texas Pacific Coal & Oil Co., which worked the geology in the area and assembled the block, turning part of it to C. J. Davidson, president of Cascade Oil Corp., is planning an offset immediately. Plugged back depth is 5,264 feet.

Reagan Wildcat

R. R. Rhodes, E. R. Bahan and Frank Oyster, consulting geologist, all of Abilene, who drilled a dry hole in the northwest quarter of Reagan County recently, have staked another location about 4 miles southwest on the M. H. Chase lands in section 40, Block 36, Township 5s, T.&P. Survey. The former test was abandoned at a total depth of 3,655 feet.

Coke Wildcat

Harve Loomis of West Texas has assembled a block and will drill in the eastern part of Coke County, south of the old Mid-Kansas (Marathon Oil Co.) block and dry holes drilled on the Lackey lands, but which showed some oil although not commercial. This will be the first test in this county in months.

Ranger and Wichita Falls

Hal Hughes, contractor of Abilene, Tex., and associates are moving in for an Ordovician test 3 miles northeast of Oplin in southern Callahan County, to go to 4,500 or 5,000 feet in search of production in the Ellenberger. Two gas wells have been drilled. Hughes and associates have a block of 1,000 acres surrounding the location, which is on the T. A. Irwin farm in section 349, George W. Denton Survey. They are also to drill a shallow test. Location has been made for a 1,500-foot test on Tom Windham lands in section 340, same survey, and about 1½ miles north.

Cooke Discovery

Gainesville is due to see many more tests as the result of another discovery. Anderson & Kerr of Oklahoma City, who have acquired considerable holdings, also drilling tests, have opened a new field in their No. 1 F. A. Bruhlemeyer, 3 miles east of the town, which logged a sand at 2,001-15 feet, shut down to run casing and make a test of the well which showed good for 331 bbls. per day from the new sand horizon. The oil produced tested 42.8 degrees, or higher than in the small shallow pool about 1½ miles southwest, from

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which production is found at around 1,600 feet.

The operators are planning a second test, which will probably be drilled deeper. Other operators holding leases will no doubt start drilling and the state is to put 154 acres 2 miles north of the discovery up for sale at once. This acreage is around the State Training School for Girls. The discovery is in the H. Strong Survey, Abstract No. 390. It is showing a good gas volume from the sand.

Young County

Ray & Staniforth have completed No. 1 J. Wooten, wildcat in section 1,976, 5 miles north of Graham in Young County, making 380 bbls. in three hours before shutting in for storage after it was treated with acid in the saturated lime logged from 3,940-63 feet. This well opens more land in Young County, one of the busiest in the North Central Texas districts. It is about 1 mile north of the nearest producer.

WEST TEXAS COMPLETIONS

Ector County

Continental Oil Co. No. 4-A Kloh and others, total depth 4,265 feet, shot, 563 bbls. Alma Oil Co. No. 1 Kloh, 4,062-4,208 feet, shot, 272 bbls. Amerada Petroleum Corp. No. 2 Connell, 3,470-3,600 feet, shot, 213 bbls. Phillips Petroleum Co. and Pure Oil Co. No. 4 Cowden, 4,904-4,136 feet, 2,300 bbls.

Glasscock County

World Oil Co. No. 4-C McDowell, 2,396-2,430 feet, 64 bbls.

Howard County

Dunnigan and Hyer No. 1 Clay, 2,385-2,516 feet, 50 bbls.

Jones County

Ungren and Frazier No. 4-C Dorsey, 2,050-68 feet, 770 bbls.; No. 3 Jennings, 1,932-47 feet, 214 bbls. Callahan and others No. 2 Higgs, dry and abandoned 3,390 feet. Medders No. 1 Neas, dry and abandoned 2,007 feet.

Pecos County

A.B.C. Oil Co. No. 3 Masterson. 1,085-1,453 feet, 153 bbls. Cardinal Oil Co. No. 6 A Smith, total depth 516 feet, 24 bbls. Marathon Oil Co. No. 10-G Yates, 1,127-1,331 feet, 228 bbls. per hour

Upton County

Gulf Oil Corp. No. 3 Sherk, 2,277-2,343 feet, shot, 1,108 bbls.

Ward County

California Co. No. 35 Durgin, 2,327-2,554 feet, shot, 504 bbls. F.H.E. Oil Co. No. 1 Maxwell, 2,261-2,526 feet, 264 bbls. California Co. No. 20 Gordon, 2,301-2,526 feet, shot, 402 bbls.; No. 23 Gordon, 2,392-2,550 feet, shot, 1,207 bbls.; No. 24 Gordon, 2,286-2,524 feet. shot, 2,416 bbls.; No. 1 Lucie Adams, 2,470-2,570 feet, shot, 1,344 bbls. Texas and Pacific Coal & Oil Co. No. 5 Barker, 2,255-2,415 feet, shot, 645 bbls Richardson Oil, Inc., No. 30-B Johnson, 2,324-2,578 feet, shot, 1,390 bbls. Kirk and Anderson No. 2 Allen, 2,165-2,225 feet, 71 bbls.

Winkler County

Humble Oil & Refining Co. No. 3 Howe, 2,870-2,962 feet, shot, 714 bbls. Shell Petroleum Corp. No. 3-J Hendrick, 2,820-3,017 feet, shot, 553 bbls. Richardson Oil, Inc., No. 2-E Scarborough, total depth 3,048 feet, 28 bbls. in 24 hours through eight-sixty-fourths inch choke. Sinclair Prairie Oil Co. No. 1 Walton, 3,395-3,500 feet, shot, 54 bbls.; No. 1-B Walton, 2,750-2,880 feet, shot, 639 bbls. Sun Oil Co. No. 1 Keystone, dry and abandoned 4,043 feet, elevation 2,968 feet. Maxwell & Slosi No. 1 State-Walton, dry and abandoned 3,245 feet. Henderson and others No. 1-A Walton, 3,034-49 feet, 2,306 bbls.

NORTH TEXAS COMPLETIONS

Archer County

W. J. Brown No. 1 G. R. Campbell, 1,116 feet, dry. L. T. Burns No. 1 Mrs. Mathews A, 1,365 feet, dry; No. 3 W. D. Pace, 1,237-1,263 feet, 15 bbls. C. B. Christie and others No. 2 L. F. Wilson, 1,601-1,613 feet, 256 bbls. Consolidated Oil Co. No. 3 L. F. Wilson, 2,212-2,236 feet, 1,300 bbls., flowing. Deep Oil Development Co. and others No. 11 L. F. Wilson 4-A, 3,611-3,631 feet, 80 bbls.; No. 12 L. F. Wilson 4-A, 2,216-2,229 feet, 1,800 bbls., flowing. Fain McGaha Oil Corp. No. 4 Wilson F, 1,608-1,615 feet, 160 bbls. N. D. Goldsmith No. 1 L. F. Wilson, 1,609-1,615 feet, 60 bbls. Kimbell and others No. 6 J. D. Carpenter, 1,063-1,088 feet, 3 bbls.; No. 7 J. D. Carpenter, 1,055-1,063 feet, 5 bbls. Kittery Oil Co. No. 4 Richardson, 1,171 feet, dry. Lickey & Guffy No. 1 Parkey, 1,785 feet, dry. C. B. Long No. 7 J. H. Turbeville, 1,496-1,505 feet, 20 bbls. Petroleum Producing Co. No. 20 Richardson D, 1,251-1,263 feet, 20 bbls.; No. 16 Richardson E, 1,255-81 feet, 100 bbls. Underwood Drilling Co. No. 1 Andrews A, 936 feet, dry. Vital Oil Co. No. 1 Anderson, 1,407-1,425 feet, 125 bbls. White & Duncan No. 1 W. C. Owens. 714 feet, dry.

Baylor County

J. H. Hardegree No. 1 Henclrik, 300 feet, dry. Petroleum Producers Co. No. 29 W. H. Portwood, 1,391-1,398 feet, 25 bbls.

Clay County

John Gerard No. 1 Lone Star, 404 feet, dry.

Cooke County

Hudspeth and others No. 5 Trubenbach B, 923-951 feet, 50 bbls. Merrick, Inc., No. 27 Knabe, 779-795 feet, 10 bbls. Ruwaldt-Couch Petroleum Co. No. 1 Fleitman, 1,551 feet, dry. Schermerhorn Oil Co., No. 4 F. J. Hess, 778-785 feet, 10 bbls.

Jack County

Brazos River Gas Co. No. 6 York, 2,908-2,925 feet, 85 bbls. Clark and others No. 1 L. S. Wright, 756-770 feet, 16 bbls. R. D. Compton Oil Co. No. 2 Henderson OS, 337-343 feet, 15 bbls. John Korp No. 2 Lewis, 284-299 feet, 25 bbls. W. R. Stafford No. 1 Wright, 876 feet, dry.

Montague County

Bourland & Gannon No. 6 W. W. Jones A, 1,742-1,775 feet, 5 bbls.

Wichita County

F. S. Berner No. 1 Pray, 480 feet, dry. C. B. Bailey No. 32 Munger, 924 feet, dry. Roy Bourbon Co. No. 4 Watkins, 850 feet, dry. G. W. Cooper No. 37 Waggoner, 1,785 feet, dry. A. Kriss and others No. 1 C. W. Coffey, 400 feet, dry. Mogren & Anderson No. 37 Goetze, 173 feet, dry. W. B. Omohundro No. 3 Gibson A, 1,831-1,853 feet, 25 bbls. Rathke Oil Co. No. 8 Burnett, 1,825 feet, dry; No. 7 Watkins, 660-670 feet, 10 bbls. H. L. Rugeley No. 7 Waggoner, 1,613-1,628

feet, 100 bbls. J. A. D. Smith No. 1 S. M. Daniel, 600 feet, dry.

Wilbarger County

Barkley & Meadows No. 17 Waggoner C, 1,111-1,122 feet, 30 bbls. Deep Oil Development Co. No. 4 Waggoner, 1,880-1,887 feet, 50 bbls. Fain McGaha No. 16 Waggoner H, 2,561 feet, dry. Golding & Cochran No. 3 Waggoner H, 2,591-2,595 feet, 35 bbls. King Royalty Co. and others No. 2 W. T. Waggoner O, 2,578 feet, dry. Summitt Oil Co. No. 2 Waggoner, 555-561 feet, 10 bbls.

Young County

R. N. Alexander No. 1 H. F. Haygood, 752 feet, dry. L. T. Burns No. 1 Benson S M J "A," 1,002 feet, dry; No. 4 Campbell, 1,258 feet, dry. Chambers & Humphreys No. 1 Benson, 889-895 feet, 200 bbls. N. D. Goldsmith No. 2 Annie Beardon, 1,150 feet, dry. S. P. Gose No. 1 W. Hunt and others, 1,102 feet, dry. B. H. Honea No. 13 Honea, 926-935 feet, 11 bbls. Underwood & Campbell No. 2 Campbell E, 849-875 feet, 75 bbls. D. L. Wolf No. 1 J. R. Dyer, 643 feet, dry.

PANHANDLE COMPLETIONS

Carson County

Huber Petroleum Co. No. 1-0 Burnett, 2,255-2,365 feet, 79,480,000 feet gas.

Gray County

Gulf Production Co. No. 2 Barrett, 3,223-3,302 feet, 889 bbls. pumping, shot 480 quarts. Magnolia Petroleum Co. No. 12 Harrah, 3,115-3,230 feet, 281 bbls. pumping, shot 360 quarts.

Hutchinson County

Stanolind Oil & Gas Co. No. 5-B Pitcher, 3,073-3,150 feet, 482 bbls. pumping, shot 475 quarts. Harry Steckoll No. 3-H Whittenburg, 2,925-2,960 feet, 406 bbls. pumping, shot 200 quarts. The Texas Co. No. 10 Lewis, 2,900-3,006 feet, 780 bbls. pumping, shot 450 quarts. Turman and Plains No. 1-B Whittenburg, 2,786-2,836 feet, 305 bbls. pumping, shot 430 quarts.

Moore County

Phillips Petroleum Co. No. 1 Moore No. 66 (Jones fee), 3,015-3,270 feet, 176,300,000 feet gas. Texhoma Natural Gas Co. No. 2-P J. T. Sneed estate, 2,695-3,243 feet, 22,179,000 feet gas.

Wheeler County

Royal Oil & Gas Co. No. 30 Keller, 2,417-2,558 feet, 1,234 bbls. flowing. The Texas Co. No. 16 Keller, 2,395-2,525 feet, 709 bbls. pumping.

Oklahoma Fields

(Continued from Page 69)

hours and 75 bbls. the third 24 hours, and was completed. Total depth was 2,511 feet. It had several sands. Samedan Oil Co. No. 2 Higgins "D," NE SE NW section 6-2s-2w, flowed 135 bbls. in 24 hours through tubing and was completed. It had several sand series and was bottomed at 2,265 feet. Carter County Oil Co. No. 1 M. Byrd, SE SW SW section 4-2s-2w, had oil sand and broken sands from 1,082 to 1,148 feet, total depth, flowed at the rate of 5 bbls. of oil a day and was completed.

Shell Petroleum Corp. No. 63 Wirt Franklin, NE SW NE section 8-4s-3w, in the Healdton area, was completed as a 70-bbl. pumper. It had oil sands from 928 feet to 1,054 feet, total depth. Sinclair Prairie Oil Co. No. 29 Million & Thomas, SE SW SE section 5-4s-3w, was abandoned at total depth of 1,050 feet in lime. It had a gas sand at 253-80 feet. Lime was topped at 717 feet. Coline Oil Co. No. 6 Ferguson, SW NW SE NW section 6-4s-3w, an old well, was deepened from 1,123 to 1,151 feet, increasing oil production from 7 bbls. to 14 bbls. daily, completed.

Two new tests were reported in Carter County: Samedan Oil Co. No. 3 Eaves, C W half SE SW NE section 6-2s-2w, was building derrick; Bull Head Oil Co. No. 7 Daney, C W half NW SW section 4-4s-3w, an old well, was deepened from 890 feet to 1,110 feet, total depth, and abandoned.

Marshall County

G. L. Priest No. 8 Cope-Sublett, SW SE NE section 1-8s-5e, encountered water at 534 to 553 feet, total depth, and was abandoned. It was the only Marshall County completion.

One new Marshall County operation was reported. G. L. Priest No. 9 Cope-Sublett, SE SW NE section 1-8s-5e, a twin well, was rigging up machine.

Southwestern Oklahoma

Lang, Yingling & Lauck No. 16 Seay, SE SW SE section 3-7s-5w, in southern Jefferson County, was the only southwestern Oklahoma completion that was an oil producer. It had sand at 1,223 to 1,276 feet, total depth, and pumped 40 bbls. of oil a day.

R. E. Replogle No. 1-A Shull, C SW SW section 29-2-10w, in Comanche County, was abandoned at 595 feet, total depth. It had oil and gas showings at 395-428 feet and a gas showing in lime at 527-29 feet.

Gamble No. 1 Hipp, SW SW NW section 4-6-16w, in Kiowa County, had sand at 481-85 feet and production was estimated good for 5 bbls. of oil a day, but it was abandoned at 498 feet, total depth.

Clyde Rhodes and others No. 1-A Doak, SW SW SW section 1-1s-5w, wildcat north of the Velma area in Stephens County, failed to find sand and was dry and abandoned at 1,803 feet, total depth.

New work in southwestern Oklahoma: In Stephens County, L. A. Wilkins and others No. 8 Crump, SW SW SE SE section 10-2s-5w, was bottomed at 858 feet in sand topped at 851 feet, and production was estimated at 7 bbls. of oil a day; same operators' No. 9 Crump, NE SW SE SE section 10-2s-5w, machine on location; Mudge Oil Corp. No. 4 Anderson, C E half SW SW section 10-3s-5w, machine on location; Texas Co. No. 2 Tomlin, SW NW NE NW section 15-3s-5w, drilling at 114 feet.

Central West Fields

(Continued from Page 66)

lingsworth No. 1 Mamie Schortz, section 1, is a gas well at 512 feet, and Kentucky Natural Gas Co. No. 1 Mary A. Kress & Co., section 9, Anderson Township, is dry at 552 feet. Charles Dice is drilling No. 3 Charles Krutz, section 6, Anderson Township.

KENTUCKY

In McLean County, Hupp, Duff and others No. 1 Tanner produced an initial of 180 bbls. Felix Miles No. 1 Kelly Atherton is dry. James B. Mayers No. 6 P. H. Morton, in the Livermore area, in McLean Township, is dry.

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Eastern Field Report

By STAFF CORRESPONDENT

SALT ROCK, CABELL COUNTY, WEST VIRGINIA, MOST ACTIVE

PITTSBURGH, Pa., Apr. 20.—Fifteen operations completed in the lower Eastern fields during the week resulted in nine gas wells, four producers with an initial production of 89 bbls., and two dry holes. At present there is the usual April lull in completions due to road conditions. The most active part of the lower fields is the Salt Rock district in Cabell County where 13 wells are drilling and 10 others are preparing to start.

SOUTHEAST OHIO

Five wells were completed in Southeast Ohio, and none large. In Coshocton County, Preston Oil Co. drilled No. 3 Robert H. Giffen in New Castle Township, through the Clinton sand and it was dry.

In Guernsey County, Ralston Oil Co. completed No. 3 Verna A. Quillan, in section 10, Wheeling Township, in the Niagara lime at 3,648 feet and it produced 15 bbls. the first day, natural.

In Knox County, Sterl C. Brown and others completed a second test on the A. L. Rine farm in section 14, Clay Township, in the Berea sand at 703 feet. It is starting off as a 4-bbl. pumper.

In Licking County, Wehrle Co. drilled a test on the Lake and McCracken farm in the NE section 13, Hopewell Township, in the Clinton sand at 3,210 feet. The well was showing for a fairly good producer but the shot collapsed the casing and the hole is now being cleaned out. In Hanover Township, Edward H. Everett Co. drilled No. 4 Jacob J. Nethers in the NW section 19, through the Clinton sand to 3,100 feet. It was dry and is being plugged.

SOUTHWEST PENNSYLVANIA

Completions in Southwest Pennsylvania consisted of two gas wells. In Richhill Township, Greene County, Natural Gas Co. of West Virginia completed a test on the Thomas Holmes farm at 2,800 feet. There was about 212,000 feet of gas in the Gordon sand at 2,763 feet. The Gordon sand was found at 2,750-73 feet.

In East Bethlehem Township, Washington County, James Hagerman completed a test on the Emory heirs farm near Millsboro at 2,564 feet. The Fifty Foot sand was at 1,965-2,033 feet with some gas at 2,004 feet. The Bayard sand was at 2,428 feet and extended to 2,455 feet with gas showing at 2,440-50 feet. The gas is estimated at 485,000 feet a day.

In South Franklin Township, in Washington County, Carnegie Natural Gas Co. has made a location on the Belle A. Jones farm. In South Strabane Township, Victor D. Behm and others are still shut down on the William Paul & Son farm. In Peters Township, Amon & Kaufman have reached 1,855 feet on the Parks & Son farm.

In Cecil Township, G. N. Glass is drilling at 2,275 feet on the F. W. McEwan farm. Bentleyville Fuel Co. is drilling in the Injun sand, topped at 1,590 feet, on the Wherry heirs farm and there is a showing of about 270,000 feet of gas at 1,700 feet.

In Amwell Township, Washington County, Union Gasoline & Oil Corp. is down 2,210 feet on the Thomas Beabout farm and moving in tools on the Hiram Vankirk farm. South Penn Oil Co. is drilling on the Lowery farm and also on the Seese farm and at work on the Zimmerman tract.

In Morris Township, Washington County, A. V. Lewis and others have started drilled on the D. L. McVay farm. Carnegie Natural Gas Co. is down 3,420 feet in deepening No. 1 Lauder in Perry Township, Fayette County.

In Greene County, Carnegie Natural Gas Co. is down 3,044 feet in deepening No. 1 Lee Wade in Perry Township. The Thirty-foot sand was at 2,835-80 feet. The Gordon Stray sand was at 2,963-75 feet, with a slight showing of gas.

In Morris Township, Greene County, Burleigh Wright has reached 1,750 feet on the D. C. Yoders farm with the Big Injun sand at 1,630 feet and some gas showing at 1,710 feet. Duquesne Gas Co. is down 500 feet on the Clutter farm. Penn Ohio Gas Co. has reached 2,300 feet deepening No. 1 Harry Clutter. South Penn Oil Co. is drilling at 300 feet in No. 9 Charles Harvey in Center Township.

In Franklin Township of Greene County, Waynesburg Home Gas Co. is deepening No. 1 W. F. Guthrie. Drilling was started at 1,345 feet and the top of the Big Injun sand was at 1,622 feet with the present depth at 1,802 feet.

Deep Tests

On Chestnut Ridge in South Union Township, Fayette County, the test of William Snee and others on the Summit Hotel property is drilling at 6,240 feet.

In Pleasant Township, Washington County, about 2 miles south of Hickory, Norwood Johnson and others are down 1,430 feet on the James McBurney farm scheduled for the lower Devonian series.

WEST VIRGINIA

The most interesting producer completed for some time in West Virginia is the second test of Moats & Richards on the Grover Ross, or Stout & Jackson lease, mapped as the Elizabeth Harkness farm on Bear Run in Grant district, Ritchie County. It made a showing of oil on top of the Maxon sand which increased with depth and is now rated at 60 bbls. a day. No. 1 on this farm was a 9,000,000-foot gas well, initial, in the Keener sand. This producer opens what may be a new small pool.

Gas Wells

In Calhoun County, South Eastern Gas Co. completed a second test on the Amos Smith farm in Lee district in the Injun sand at 1,980 feet. It gauges 144,400 feet, natural. Big Lime was at 1,801-76 feet; Big Injun sand at 1,876-1,940 feet, with gas showing at 1,901-12 feet and 1934-40 feet.

In Gilmer County, Verl Stewart and others completed a test on the Frank Stalnaker farm in DeKalb district in the Injun sand as a small gas well.

In Kanawha County, West Virginia Gas Corp. completed No. 13 on the C. M. and Lizzie Caldwell farm in Loudin district in the Brown shale at a total depth of 4,038 feet. It had 60,000 feet, natural, which after a shot of 3,600 pound increased to 320,000 feet a day in 36 hours.

In Washington district, Kanawha County, Cambridge Gas Co. deepened No. 5 Garnet Wiseman to 3,232 feet and it is a gas well gauging 308,000 feet a day. There was gas in the Shale at 2,650-60 feet. The log showed slate at 2,710-3,130 feet, with gas at 2,800-10 feet, and 3,000-15 feet.

In Ritchie County, Clarvin Oil & Gas Co. completed No. 3 W. M. Marbury in Murphy district in the Berea grit at 1,133 feet as a gas well gauging 300,000 feet a day. In this district, Toney Elliott and others completed a test on the Roy Freshour farm in the Big Injun at 1,983 feet. It gauged 82,000 feet a day. In Clay district, W. A. Bickerstaff completed a test on the S. A. Kirkpatrick farm farm in the Injun sand at 2,054 feet. It is estimated good for 160,000 feet a day.

Deep Tests

In Kanawha County, the most interesting deep test now drilling is W. O. Zeibold and others on the D. A. Griffith farm in Poca district, north of the proven territory in Elk district. It is 4,759 feet with top of the Corniferous lime at 4,751 feet.

In Malden district, South Penn Oil Co. is shut down casing the second test on the Katherine C. Scott farm at 4,802 feet. Top of the Corniferous lime was at 4,791 feet. Godfrey L. Cabot, Inc., is drilling at 3,340 feet on the W. D. Lewis farm and has started drilling the second test on the Nellie B. Tompkins farm. His No. 9 on the Campbells Creek Coal Co. is drilling at 1,490 feet and No. 10 at 745 feet. United Carbon Co. is hauling in material on the J. Q. Dickinson farm.

In Elk district, Kanawha County, Columbian Carbon Co. is down 5,018 feet in No. 3 G. and D. Copenhaver and 4,889 feet in deepening No. 1 W. L. Burdette. On the Elkland Improvement Co. it has reached 2,193 feet and on the M. M. Robertson farm is shut down at 4,605 feet, cementing. On the W. H. Baxter and others lease, the hole is being cleaned out at 4,588 feet after a casing collapse. Benedum & Trees are down 400 feet in the second test on the Mary C. Wingfield farm and Yoak Oil & Gas Co. has reached 585 feet on the W. T. and J. H. Goshorn farm.

In Loudin district, in Kanawha County, United Carbon Co. has reached 3,700 feet on the C. C. Dickinson farm. Godfrey L. Cabot, Inc., is down 1,400 feet on the Kanawha Land Co. second test.

Other Operations

In Boone County, United Fuel Gas Co. has made a location for No. 4,624 on the Horse Creek Coal Land Co. on Horse Creek in Scott district. Owens Illinois Glass Co. is building a road to No. 26 Peytonia Coal Land Co. in Peytonia district. In Scott district, E. R. Cameron is deepening No. 3 George P. Alderson and has reached 3,650 feet, with a showing of 1,144,000 feet of gas.

In Cabell County, Adkins and McComas are moving in tools on the Caldwell heirs farm on the Guyandotte River in McComas district. W. C. Kingery is down 950 feet in No. 4 Pratt heirs. Sue Gas Co. has reached 960 feet in No. 2 Gill estate. R. H. Adkins is down 730 feet on the Demma Morrison farm. Homer Gas Co. is drilling at 2,200 feet on the Homer Woodall farm. Kentucky West Virginia Gas Co. is rigging up on the J. D. Bailey farm and is drilling at 680 feet on the Arnold Walker farm. West Virginia Gas Co. is rigging up the Elmer Gill test and drilling at 1,380 feet on the E. J. Nichols farm. Fairfax Gas Co. is down 3,842 feet on the Leonard Paugh farm.

In Calhoun County, Clark Drilling Co. is rigging up on the Perry Meadows farm on West Fork in Washington district. Guy Boggess and others are spudding on the Maude Altizer farm in Lee district. Ohio Valley Gas Co. is hauling in material on the Charles Starcher farm and Recksdale Oil & Gas Co. hauling in material on the Virginia Stockwell farm on West Fork in Spencer district.

In Gilmer County, Verl Stewart has completed a rig for a second test on the Frank Stalnaker farm in DeKalb district. On Steer Run in Center district, Mudlick Oil & Gas Co. has started drilling on the E. J. James farm.

In Kanawha County, Pure Oil Co. has a location for No. 36 Slaughters Creek Coal & Land Co. on Slaughter Creek in Cabin Creek district. It is drilling at 2,089 feet in No. 262 Wil-

(Continued on Page 80)

Rocky Mountain Area

By
T. R. INGRAM

PARK COUNTY WILDCAT WELL DISCOVERY OF IMPORTANCE

DENVER, Colo., Apr. 20.—Colorado apparently has a new and important oil field in the heart of the Rocky Mountain range in the South Park Oil Co. No. 1 State, in which oil rose at the rate of 1,300 feet an hour and flowed by heads.

Wyoming is experiencing a revival of wildcatting by major companies with California and Mid-Continent operators battling for future oil reserves.

Eight new locations and several completions were reported in the Cut Bank field in Montana. The Montana Power Gas Co. No. 1 Eisler was a failure on the east side and the Santa Rita Oil & Gas Co. No. 7 Tribal missed the gusher Sunburst sand on the west side, but will be a producer in the Cut Bank.

A small well was completed in the Red Mountain district in McKinley County, New Mexico, making 18 bbls. initial, of 40 gravity oil at 460 feet.

NEW MEXICO

Gulf Oil Corp. No. 4 North Grimes, SW SW NE SW section 21-18-38, in the Hobbs field, flowed 8,811 bbls. of oil through casing and tubing in the first 24 hours after acid treatment and was completed. Before acidizing it flowed 77 bbls. per hour through tubing. Gas measured 7,440,000 feet. The oil pay was encountered at 4,213-23 feet, total depth. Sun Oil Co. No. 1 McKinley "B," SW SW NE section 20-18-38, was completed as a 25-bbl. pumper after acidizing. Before acid treatment it swabbed dry. Pay was had at 4,200-20 feet. It was bottomed at 4,242 feet, where water intruded, and was plugged back to 4,220 feet.

In the Monument area, Texas Co. No. 1 State "G," C SE SW section 19-19-37, flowed 3,504 bbls. natural through tubing in the first 24 hours, with gas gauging 2,500,000 feet, and was completed. Oil pay was found at 3,850 to 3,980 feet, total depth. Continental Oil Co. No. 1-C-30 State, C NE NW section 30-19-37, topped oil pay at 3,929 feet, drilled to 3,970 feet, total depth, and was completed. It flowed 1,560 bbls. natural through three-quarters inch tubing choke the first 24 hours, and produced 1,070,000 feet of gas. Gulf Oil Corp. No. 2 Graham-State, "C," C NW NE section 24-19-36, was acidized two times with 5,000 gallons and in the first 24 hours after second treatment produced 105 bbls. of oil and 6 bbls. of water in 24 hours on gas lift. Oil pay was had at 3,995 to 4,060 feet, total depth. Amerada Petroleum Corp. No. 3 State "J," C NE SW section 2-20-36, was completed at total depth of 3,930 feet, after topping oil pay at 3,818 feet. In the first 24 hours it flowed 600 bbls. of oil natural through 1-inch tubing choke. Gas gauged 463,000 feet.

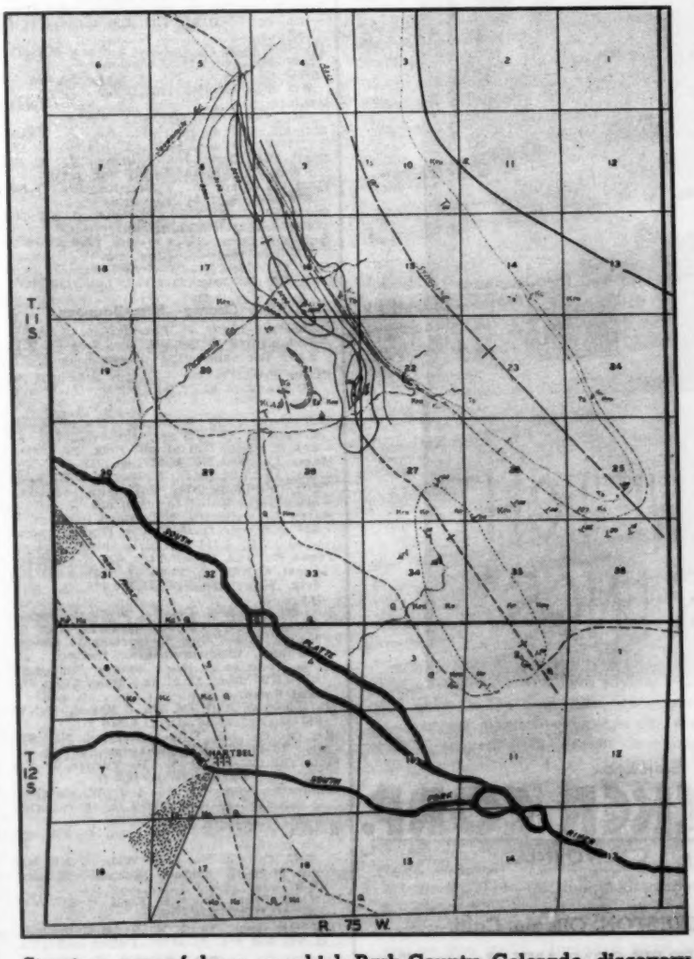
In the Eunice district, Devonian Oil Co. No. 3 State-Heasley, C NE SE section 5-21-36, was acidized with 2,000 gallons and flowed 528 bbls. of oil the first 24 hours through quarter-inch tubing choke, and was completed. Top of oil pay was 3,828 feet; total depth 3,859 feet. Tide Water Oil Co. No. 1 State "E," C NE SE section 16-21-36, flowed 996 bbls. of oil natural through 1-inch tubing choke in 24 hours and was completed. Gas was estimated at 1,000,000 feet. Oil pay was had at 3,800 to 3,886 feet, total depth. Continental Oil Co. No. 30-A-2 Lockhart, C NE NE section 30-21-36, an old well deepened from 3,942 feet to 3,983 feet, was acidized and flowed 114 bbls. of oil and 11 bbls. of water through tubing in 24 hours and was completed. Gas gauged 396,000 feet. Oil pay was topped at 3,918 feet. Before deepening, it was cutting 8 per cent water.

In the Cooper area, General Crude Oil Co. No. 1 State "F," C SW SW section 2-24-36, was completed at a total depth of 3,624 feet, in oil pay topped at 3,539 feet. In the first 24 hours after second acid treatment, it flowed 720 bbls. of oil plus 50 per cent fresh water through 1-inch tubing choke. Gas was estimated at 1,000,000 feet. Before acidizing the first time it flowed 28 bbls. in 12 hours and after acidizing the first time flowed 55 bbls. daily.

In the Sims area, Skelly Oil Co. No. 1 A. L. King, C SE NW section 4-23-37, flowed 142 bbls. of oil through casing and tubing in the first 24 hours after a shot with 270 quarts and was completed at 3,683 feet, total depth. Oil pay was topped at 3,562 feet.

Monument Area

Texas Co. No. 2 Saunders, C SW SE sec. 18-19-37. Drlg. 3,656 ft.
Oilwell Drlg. Co. No. 1 State "A," C SW NE sec. 29-19-37. T.D. 3,800 ft.; waiting on cement.
Gulf Oil Corp. No. 1 Luthy, C SW NW sec. 29-19-37. T.D. 3,945 ft.; flowed 72 bbls. in 3 hrs.; acidized; testing.



Structure map of dome on which Park County, Colorado, discovery was made. Contours on top of Pierre
(Map by Petroleum Information, Inc., Denver, Colo.)

Amerada Pet. Corp. No. 1 State "O," C NW NE sec. 30-19-37. Drlg. 2,885 ft.
Continental Oil Co. No. 2-C-30 State, C NW SW sec. 30-19-37. T.D. 3,910 ft.; drill pipe stuck; fishing.
Amerada Pet. Corp. No. 1 Culp, SW SW SE sec. 31-19-37. T.D. 3,890 ft.; flowed 15 bbls. per hour; to acidize.
Anderson & Prichard Oil Corp. No. 1 Britt "A," C SE SW sec. 6-20-37. Drlg. 3,842 ft.
Amerada Pet. No. 1 Weir "A," C NW SW sec. 25-19-36. Swabbed 34 bbls. per hour for 24 hrs. after acidizing; T.D. 4,001 ft.; plugged back 3,897 ft.; cleaning out.
Skelly Oil Co. No. 1 Christmas, C SW SW sec. 25-19-36. T.D. 3,935 ft; acidized; swabbed 65 bbls.; to shoot.
Amerada Pet. Corp. No. 3 Weir, C NW SW sesc. 35-19-36. T.D. 3,820 ft.; drilling plug.
Shell Pet. Corp. No. 2 State "B," C NW NW sec. 36-19-36. T.D. 3,793 ft.; drilling plug.
Continental Oil Co. No. 1-A-3 J. L. Reed, C NE NE sec. 3-20-26. T.D. 3,871 ft.
Gulf Oil Corp. No. 6 Culp, C NW NE sec. 19-19-37. Drlg. 3,840 ft.
Gulf Oil Corp. No. 2 Graham-State "D," C SE SE sec. 19-19-37. Drlg. 3,627 ft.
Shell Pet. Corp. No. 2 State "D," C NE SE sec. 19-19-37. Drlg. 3,345 ft.
Gulf Oil Corp. No. 1 G. C. Mathews, C SW SE sec. 6-20-37. Drlg. 3,090 ft.
Gulf Oil Corp. No. 1 A. B. Reeves, C NW SW sec. 29-20-37. Wildcat; T.D. 2,537 ft.; set 7⅝-in. casing.
Gulf Oil Corp. No. 3 Graham-State "C," C SW NE sec. 24-29-36. Cellar and pits.
Amerada Pet. Corp. No. 4 Weir, C SE NW sec. 35-19-36. Drlg. 3,762 ft.
Sun Oil Co. No. 4 Weir, C SW NE sec. 35-19-36. T.D. 2,478 ft.; waiting on cement.
Sun Oil Co. No. 6 Weir, C NW NE sec. 35-19-36. Loc.
Texas Co. No. 2 Mattern, C SW SW sec. 20-19-37. Drlg. 1,290 ft.
Amerada Pet. Corp. No. 1 State "P," C NW SW sec. 29-19-37. Rig.
Amerada Pet. Corp. No. 1 State "R," C NE SW sec. 29-19-37. Rig.
Amerada Pet. Corp. No. 2 State "O," C SW NE sec. 30-19-37. Spudded.
Texas Co. No. 2 Phillips, NE NE NW sec. 6-20-37. Drlg. 2,000 ft.
Amerada Pet. Corp. No. 1 Weir "B," C SW NE sec. 26-19-36. Drlg. 3,261 ft.
Amerada Pet. Corp. No. 2 Phillips, C SE NE sec. 1-20-36. Drlg. 1,472 ft.
Amerada Pet. Corp. No. 2 State "H," C NW SE sec. 1-20-36. Drlg. 769 ft.
Skelly Oil Co. No. 2 State "D," C NE SE sec. 1-20-36. T.D. 2,400 ft.; waiting on cement.
Texas Co. No. 4 State "E," C NE SW sec. 1-20-36. Drlg. 532 ft.
Tide Water Oil Co. No. 1 State "F," C NW NW sec. 20-19-37. Set 13-in. csg.; T.D. 1,415 ft.; waiting on cement.
Ohio Oil Co. No. 2 State-Elliott, C NE SE sec. 30-19-37. Drlg. 70 ft.
Continental Oil Co. No. 2-A-6 Britt, C NW SW sec. 6-20-37. Drlg. 855 ft.
Fred Turner, Jr., No. 1 State "A," NE NW SW sec. 2-20-36. Spudding.
Texas Co. No. 3 Phillips, C SW NW sec. 6-20-37. Cellar and pits.
Anderson-Prichard Oil Corp. No. 3 Britt, SE SW NE sec. 7-20-37. Loc.
Sun Oil Co. No. 1 State, C NE NE sec. 25-19-36. Cellar and pits.
Anderson-Prichard Oil Corp. No. 1 State, C SW NW sec. 2-20-36. Cellar and pits.
Gulf Oil Corp. No. 2 Luthy, C NW NW sec. 29-19-37. Cellar and pits.
Amerada Pet. Corp. No. 3 State "O," C SE NE sec. 30-19-37. Location.
Continental Oil Co. No. 3 State "C," C SW NW sec. 30-19-37. Location.
Continental Oil Co. No. 4 State "C," C SE NW sec. 30-19-37. Cellar and pits.
Amerada Pet. Corp. No. 1 Lambert, NW NW NE sec. 6-20-37. Cellar and pits.
Amerada Pet. Corp. No. 1 State "B," C SE SW sec. 2-20-36. Location.

Eunice Area

Continental Oil Co. No. 6-B-4 Meyer, C S half SE NW sec. 4-21-36. T.D. 3,864 ft.; tubing to test.
Continental Oil Co. No. 7-B-4 Meyer, C NW SE sec. 4-21-36. T.D. 3,792 ft.; set 5½-in. csg.
Continental Oil Co. No. 8-B-4 Meyer, C SW NE sec. 4-21-36. T.D. 3,780 ft.; drlg. plug.
Gulf Oil Corp. No. 8 Bell-Ramsey-State, C NW NW sec. 4-21-36. T.D. 1,290 ft.; set 7⅝-in. pipe.
Gulf Oil Corp. No. 1 Orcutt, C SW SE

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sec. 5-21-36. T.D. 3,862 ft.; drilled by at 3,492 ft.

Gulf Oil Corp. No. 2 Orcutt, C NE NE sec. 5-21-36. Drlg. 3,515 ft.

Humble O. & R. Co. No. 3 Adkins, C NE SW sec. 10-21-36. Drlg. 2,191 ft.

Gulf Oil Corp. No. 2 Bell-State "C," C SW NW sec. 15-21-36. Drlg. 3,800 ft.

Gulf Oil Corp. No. 5 Arnott-Ramsey "C," C SE SW sec. 21-21-36. T.D. 3,390 ft.; testing.

Gulf Oil Corp. No. 6 Arnott-Ramsey "C," C NE NW sec. 21-21-36. T.D. 3,570 ft.; drill pipe stuck.

Continental Oil Co. No. 4-B-28 Lockhart, C SW SW sec. 28-21-36. T.D. 3,927 ft.; P.B. to 3,901 ft.; testing.

Continental Oil Co. No. 5-B-28 Lockhart, C NW NE sec. 28-21-36. Drlg. 3,815 ft.; under pressure.

Empire G. & F. Co. No. 2 Felton, C SE NW sec. 28-21-36. T.D. 3,925 ft.; swab. small amount of oil.

Humble O. & R. Co. No. 9 State "B," C NE SW sec. 29-21-36. T.D. 3,914 ft.; drill stem test; showed oil.

Empire G. & F. Co. No. 4 State "D," C SE NE sec. 32-21-36, five-eighths mile N part of No. 157 lease. T.D. 3,941 ft.; swabbed dry; to deepen.

General Crude Oil Co. No. 1 State, C NW SW sec. 32-21-36, one-half mile NW part No. 157 lease. T.D. 3,974 ft.; swabbing and testing; oil in hole.

Empire O. & R. Co. No. 5 State "D," C NE NW sec. 32-21-36. Rigging up rotary.

Gulf Oil Corp. No. 2 Janda "B," C NE SE sec. 32-21-36. Drlg. 3,582 ft.

Gulf Oil Corp. No. 1 Arnott-Ramsey "D," C NW NW sec. 33-21-36. T.D. 3,885 ft.; swabbing.

The Texas Co. No. 1 State Aggies, C SE SE sec. 31-20-37, west offset No. 196 lease. T.D. 3,750 ft.; setting 7-in. csg.

Shell Pet. Corp. No. 1 State-Endura "D," C SE NW sec. 11-21-35. Drlg. 3,970 ft.

Shell Pet. Corp. No. 1 State "H," C SE SE sec. 13-21-36. T.D. 3,954 ft.; plugged back.

Continental Oil Co. No. 6-A-17 Meyer, C NW SW sec. 17-21-36. T.D. 1,362 ft.; set 10¾-in. csg.

Continental Oil Co. No. 5-A-18 Meyer, C SE NE sec. 18-21-36. T.D. 294 ft.; set 10¾-in. csg.

Jim Murray No. 2 Wallace, C NW NW sec. 3-21-36. Drlg. 3,000 ft.

Continental Oil Co. No. 1-B-14 Lockhart, C SW NW sec. 14-21-36. Rig.

General Crude Oil Co. No. 2 State "E," C NE SW sec. 32-21-36. Rig.

Shell Pet. Corp. No. 1 State "E," C NE NE sec. 6-21-36. Rig.

Gulf Oil Corp. No. 1 Janda "C," C NW SW sec. 15-21-36. Drlg. 150 ft.

Tide Water Oil Co. No. 2 State "E," C SE SE sec. 15-21-36. T.D. 300 ft.; set 12½-in. csg.

Peerless O. & G. Co. No. 2 State, NE NW SW sec. 29-21-36. Location.

Devonian Oil Co. No. 4 State-Heasley, C SW SW sec. 5-21-36. Bldg. rig.

Atlantic Oil Producing Co. No. 1 State "K," C SE SW sec. 6-21-36. Cellar.

Humble Oil & Ref. Co. No. 4 Adkins, C NW SW sec. 10-21-36. Rig.

Shell Pet. Corp. No. 1 State "J," C SE SW sec. 32-20-37. Cellar and pits.

Gulf Oil Corp. No. 9 Bell-Ramsey, C SW SW sec. 4-21-36. Location.

Gulf Oil Corp. No. 4 Orcutt, C SE NE sec. 6-21-36. Rigging up.

Gulf Oil Corp. No. 1 Frona Leck, C NW NE sec. 14-21-36. Bldg. rig.

Gulf Oil Corp. No. 7 Arnott-Ramsey "C," C NW NE sec. 21-21-36. Location.

Lea County—Miscellaneous

Culbertson-Irwin & Stovall No. 1 J. B. Humphreys, C SE SW sec. 3-25-37. T.D. 3,382 ft.; connecting pressure head.

Plains Prod. Co. No. 1 George Smith, C SE SE sec. 4-25-37. T.D. 3,033 ft.; blew out; fishing.

Culbertson-Irwin & Stovall No. 1 J. A. Stuart, C SW SE sec. 10-25-37. T.D. 3,294 ft.; hole full of oil; drlg. by tools.

Harry Leonard No. 1 Justice, SW NW NW sec. 20-25-37. T.D. 3,501 ft.; P.B. 2,970 ft.; flowed 18 bbls. daily; gas est. 25,000,000 ft.; killed to clean out.

Harry Leonard No. 1 Leonard-Lanhart, C SW NE sec. 21-25-37 (on Humble acreage). T.D. 2,991 ft.; drlg. plug.

Texas Co. and Repollo Oil Co. No. 1 Lanchart, C NE sec. 29-25-37. T.D. 2,636 ft.; drlg. plug; gas est. 15,000,000 ft.; killing gas.

Stanolind O. & G. Co. No. 29 Cyrus Farnsworth, C SW NW sec. 18-26-37. T.D. 3,054 ft.; steel line measurement; flowed 180 bbls. fluid in 3 hrs.; testing.

W. L. Todd et al No. 1 Lemon Permit, C NW SW sec. 17-21-32. T.D. 3,752 ft.; shut down.

Maljamar O. & G. Co. No. 6 Baisch, C NW SE sec. 21-17-32. Drlg. 3,850 ft.

Sun Oil Co. No. 1 Weatherly, C NE SW sec. 17-21-37, wildcat. Drlg. 1,667 ft.

Ohio Oil Co. No. 1 W. H. Turner, C NE SE sec. 29-21-37. Drlg. 120 ft.

Landreth Prod. Co. No. 1 J. W. Grizzell, C SE SW sec. 5-22-37. T.D. 40 ft.; rigging up rotary.

Rowan et al No. 1 Mattern, C SW SE sec. 7-22-37. Rig.

C. & G. Oil Co. No. 1 E. Weir, C NE NE sec. 14-20-37, wildcat. T.D. 257 ft.; set 12-in. csg.

Gulf Oil Corp. No. 1 E. King, C SW NW sec. 28-21-37. Bldg. rig.

Gulf Oil Corp. No. 1 W. T. McCommack, C NE NE sec. 32-21-37. Cellar and pits.

Ohio Area

Shell-Devonian No. 1 Christmas, C NE NE sec. 21-22-36. T.D. 3,839 ft.; swabbing through tubing.

Chaves County

Tannehill No. 2 Campbell, C NE SE sec. 1-11-25. Drlg. 1,210 ft.

Eddy County

Etz Bros. No. 2 State, C NW SW NE sec. 16-17-30. Drlg. 2,420 ft.; hole full of oil; flows by heads.

Ohio Oil Co. No. 1 State-McCullough, SE SW SW sec. 16-17-30. Drlg. 2,972 ft.; heads 1 bbl. per hour.

Premier Pet. Corp. No. 2 Dexter "E," NW SW NE sec. 20-17-30. Drlg. 2,920 ft.

Tignor, Etz & Keys No. 1 Keys "B," sec. 3-17-28. Dry 1,312 ft.

Red Lake Oil Co. No. 6 State, NE NE SW sec. 22-17-28. Drlg. 1,500 ft.

D. & B. Oil Co. No. 1 Jenkins, NW SW NW sec. 20-17-30. T.D. 3,258 ft.; testing; est. 200 B.P.D.

Dexter & Berry No. 1 Berry, NW NE NW sec. 21-17-30. Drlg. 2,265 ft.

Dooley & Dixon No. 1 Commerce, C W½ NW NW sec. 18-20-27. Drlg. 595 ft.

Tex Patillo No. 2 Thomason, NE cor. sec. 1-20-28. T.D. 1,106 ft.; S.D.

Hobbs Area

Shell Pet. Corp. No. 1 State "E," C E half SE SE sec. 14-18-37. T.D. 4,374 ft.; P.B. 4,178 ft.; shut in.

Continental Oil Co. No. 3-B-13 State, C NE SW sec. 13-18-37. Drlg. 3,325 ft.

National Securities Oil Corp. No. 1 Linam, NE SE SW sec. 33-18-37; wildcat. Old well plugging back from 4,238 to 4,220 ft.; testing shutoff.

Cooper Area

Liberty Oil & Drlg. Co. No. 1 J. W. Hair, SW SW SE sec. 24-24-37. Drlg. 3,055 ft.

Plains Prod. Co. No. 1 R. L. Mosley, C NW SE sec. 34-24-37. T.D. 3,551 ft.; show sulfur water; plugging back.

Southern Oil Corp. No. 1 Vaughan, C SW SE sec. 15-24-36. Rigging up.

Southern Oil Corp. No. 1 Gates, C NW NW sec. 23-24-36. Rigging up.

Sims Area

Samedan Oil Co. No. 1 Parks, 330 ft. from S and 400 ft. from W lines, SW¼ sec. 14-22-37. Drlg. 2,550 ft.; gas estimated 3,000,000 ft.

Continental Oil Co. No. 1-A-22 Elliott, C SW SW sec. 22-22-37. T.D. 1,130 ft.; standardising.

Skelly Oil Co. No. 1 B. L. King, C SW SE sec. 33-22-37. T.D. 3,680 ft.; flowed 84 bbls. oil in 45 minutes after shut in for 11 days; died; to pump.

Skelly Oil Co. No. 1 Ella Simms, C SW NE sec. 3-23-37. Location.

Penrose & Rowan No. 2 Cary, C NE SW sec. 22-22-37. Drlg. 1,330 ft.

Sun Oil Co. No. 1 Richards, C NE SE sec. 6-23-37. Drlg. 2,920 ft.

Humble Oil & Refining Co. No. 1 W. B. Farrell, C SW SE sec. 22-22-37. Moving in material.

Tide Water Oil Co. No. 1 A. Walden, C SE NE sec. 21-23-37. Moving in material.

Magnolia Pet. Co. No. 1 Cary, C NE SE sec. 21-22-37. Location.

Penrose & Rowan No. 3 Cary, C SE NW sec. 22-22-37. Rigging up rotary.

Penrose & Rowan No. 4 Cary, C SW NW sec. 22-22-37. Cellar and pits.

NORTHWEST NEW MEXICO

Bernalillo County

Norine Realty Co., Inc., No. 2 Gallegas grant, SE NW NW sec. 19-11n-4e. Drlg. 1,400 ft., sd. and gvl.

Guadalupe County

Anton Chico Dev. Co. No. 2 fee, NW NE SW sec. 20-9n-17e. Drlg. 522 ft.

Harding County

Khasy et al No. 1 De Baca, C sec. 19-20n-31e. Rng. 8¼-in. at 847 ft.; 10-in. at 250 ft.

McKinley County

Forth & Hickerson No. 1 fee, NE NW NW section 29-20n-9w, Red Mountain district, was completed at 460 feet for 18 bbls. first 18 hours on the pump. Top of the pay was 452 feet and the 6⅝-inch was set at 440 feet. The oil tests 40 gravity. It is two locations east of the discovery well, Bennett & Lingfelter No. 1 Santa Fe, which made 20 bbls. initial at 469-72 feet about a year ago. Wells drilled around the discovery indicate a small pool.

S. Dysart et al No. 1 Bouton, CEL NW NE sec. 14-14n-10w, O.W.D.D.; T.D. 1,490 ft.; rmg. at 600 ft.

Seward et al No. 1 State, NE SE SE sec. 2-19n-9w. Drlg. 585 ft. in sh.

Seward et al No. 1 fee, C NW SE sec. 35-20n-9w. S.D. 437 ft. in sh.

Red Mountain O. & G. Co. No. 1 State, NE NE SW sec. 21-20n-9w. S.D. 100 ft.; (formerly Dave Stacey).

Foster & Clark No. 1 Railroad Land, NE NE NW sec. 29-20-9w. Spud to 75 ft. and S.D.

Montrose O. & G. Co. No. 1 State, NE NE sec. 28-20n-9w. R.U. spudder.

Claude Walker No. 1 Patd, NE SW SE sec. 20-20n-9w. Ready to spud; (first report).

San Juan County

The Southern Union Gas Co. No. 3 Government, C NE NE section 14-28-

11w, Kutz Canon district, reported a completion last week, but not tested, gauged 2,500,000 feet from sand at 1,-815-84 feet.

Aichison & Galloway No. 1 Ptd., C SE SE sec. 19-29n-11w. S.D. without R.U.
Continental Oil Co. No. 53 Tribal, SE SE NW sec. 2-29n-19w. Rig.
W. L. Hair No. 1 Hair, NE NW NE sec. 23-29n-11w. Drlg. 684 ft.
Jack Amenda No. 3, SW NW SW sec. 25-29n-12w. Drlg. 1,375 ft.; show of 22,000 ft. of gas at 935-65 ft.
Jack Amenda No. 4 fee, NW NE SW sec. 25-30n-12w. Drlg. 680 ft.
J. D. Cross et al No. 1 Wilson, SW SW SE sec. 17-30-11w. S.D. 810 ft.
Cross & Pool No. 1 Aztec, sec. 1-30-11w. Making wtr. shutoff at 740 ft.
Nick Spatter No. 1 fee, C NE SW sec. 32-21-11w. S.D. 1,730 ft.; T.A.
Southern Union Gas Co. No. 6 Government, C NW NW sec. 19-28-10w. Ready to spud.

Quay County

Quay County Dev. Co. No. 1 Wallace, SW SW SE sec. 19-9n-33e. S.R. 814 ft.; rainbows at 814 ft.; show of S.W. at 775 ft.

San Miguel County

Cabra Springs O. & G. Co. No. 1 Cabra Springs ranch, SW NE NE sec. 22-12n-23e. T.D. 4,045 ft.; prep. to resume.
Sabra Springs O. & G. Co. No. 1 Jones ranch, SW SW SW sec. 31-12n-22e. T.D. 726 ft.; prep. to build standard rig to replace Fort Worth spudder.

Torrance County

45 Pet. Co. No. 1 Greenfield, C NW SW sec. 17-9-8e. Drlg. 1,500 ft.; S.G.
Bruce Frazier No. 1 Frazier, SE sec. 12-2n-31e. Drlg. 1,575 ft., sd. and L.

COLORADO

Colorado came to the front this week with an important wildcat oil discovery in the heart of the Rocky Mountain range at a surface elevation of 9,386 feet above sea level, in a new producing horizon for the state and far removed from the area where the major companies have leased up several million acres of prospective territory.

The discovery was made in the South Park Oil Co. No. 1 State, SE SE SW section 16-11s-75w, in Park County in the center of the state. It topped a sand at 4,157 feet about 700 feet above the base of the Pierre shale known locally as the Apache sandstone. Oil rose 400 feet in the hole. It was then deepened a foot and the fluid came up to 1,300 feet and 2 feet into the sand at 4,159 feet, present total depth, the hole filled at the rate of 1,300 feet an hour and began flowing. This was Monday, April 13, at 2 p.m. It flowed by heads at 20-minute intervals the remainder of Monday afternoon and all of that night until the next morning when a valve was installed and the well was shut in. The rate at which the hole filled is equal to about 50 bbls. an hour. The oil is of excellent grade, brown in color and tests 36.5 gravity A.P.I. scale. There was one 150-bbl. tank on the lease when the well came in. One 250 and one 500-bbl. tank are being erected. The present plan is to underream the 6¼-inch from 3,960 (C.D.) feet to the top of the sand and cement before drilling any deeper.

The well is located in the center of a large sedimentary basin entirely surrounded by granite mountains in what is known as South Park. The nearest oil production is the Florence-Canon City district, 55 miles to the southeast. The old Boulder field is 75 miles to the northeast.

The geological work was done by C. E. Shoenfelt, of Petroleum Information, Inc., assisted by H. E. Mathias, Ross L. Heaton and R. M. Butters. The basin is entirely surrounded by granite mountain ranges and if oil had formed in the sedimentary beds it was apparent that there was no way for it to escape. The Hartsel anticline occupies a narrow valley between two well-defined synclines lying east and west of and approximately parallel to the surface axis. It has a southeast-northwest trend and is traced for about 22 miles from section 2-12s-75w to section 2-9s-76w, where it dips and disappears as it approaches the Elkhorn fault. This fault parallels the anticline on the east and turns westward at the north. Another fault lies to the west of the anticline. It is along the faults in the Mosquito range, where the highly mineralized Alam area is located.

An interesting feature of the situation is that while the wildcat was nearing the objective sand, conferences of state and federal officials were being held in Denver in regard to a proposal to acquire 549,000 acres of land in South Park with federal funds to create a big game reserve. The Hartsel anticline runs straight through the center of the proposed reserve. The oil discovery changed the picture over night, but the state and federal officials believe that plans will be worked out whereby the landowners may retain the mineral rights and the organiaztion of the reserve can be carried out as originally planned. The state has 60,-000 acres of school land in the park.

Adams County

E. M. Butler et al No. 1 Kate Edwards, NW SW NW sec. 15-3s-66w. M.I. portable rotary (first report).
Glenridge Oil Corp. No. 1 Hills, SE SE NE sec. 27-3s-64. Drlg. new hole at 4,153 ft.
Riddle Pet. Co., No. 1 Baxter, C SW sec. 2-3s-6w. S.D. 700 ft. for D.P.

Archuleta County

Wm. E. Hughes Est. No. 4 fee (unsurveyed), CSL SE SE sec. 24-33n-2e. S.D. on top of sand for pipe.
Carl D. Lindstrom No. 1 Crowley, SE SE SE sec. 3-32n-2e. M.I.M. (first report).
Oil City Pet. Co. No. 1-A Garnett, NW NE NW sec. 25-33n-2e, S.D. 1,515 ft.; top Dakota series 1,415 ft.
Oil City Pet. Co. and Archuleta O. & G. Co. No. 1 Reeder, Lot 5 (SW SE SW) sec. 24-33n-2e. Lowered 10-in. csg. to 205 ft.
H. L. Kendrick No. 1 Crowley (unsurveyed), sec. 2-32-1. Drlg. 937 ft. in dry hole.

Baca County

Paul Robb et al No. 7, NW NW NW sec. 24-32-48w. Spd. and S.D.

Cheyenne County

Brittel Oil Co., Inc., No. 1 Steip, C NE NW sec. 26-12s-17. Rig.

Jackson County

Colorado Oil Ref. Co. No. 1 North Park Coal Co., NW NW sec. 18-9n-78w. Drlg. 2,275 ft.

Jefferson County

Rainbow Oil Co. No. 1 Johnson, NE sec. 30-4s-68. Drk.
Ruby Hill O. & G. Co. No. 1 Braden, SE cor. sec. 24-4n-69. S.D. 4,415 ft.

La Plata County

McGarr Pet. Co. No. 1 Pinton Mesa, CSL NE NE sec. 34-35n-12w. S.D. 1,300 ft.

Lincoln County

Consolidated Smelting & Metals Co. No. 1 Hancock NE NE sec. 7-17s-52. T.D. 1,950 ft.; U.R. 10-in.

Morgan County

Swisher et al No. 1 Lunt, 93 ft. W of E line and 360 ft. N of S line, sec⅝ 3-4n-60. S.D. 1,449 ft.; 4½-in. at 1,421 ft.

Moffat County

Ohio Oil Co. No. 1 Robertson, C SW SW sec. 2-6n-92w. Location.
Texas Co. No. 7 Knowlton, NE cor. Lot 3, sec. 10-4n-91w. T.D. 4,557 ft.; Sundance at 4,503-57 ft.; swabbed 312 bbls. fluid (178 bbls. oil) in 24 hrs.; installing standard pump rig.

Montezuma County

McElmo Oil Co. No. 1 West, NE NW NE sec. 21-36n-17w. Contracted with Perry Coon to comp.; T.D. 3,705 ft.; preparing to drill by tools.

Park County

South Park Oil Co. No. 1 State, SE NE SW sec. 16-11s-75w. Drlg. 4,160 ft.

Routt County

Mid-Colo Pet. Co. No. 1 Omoholt, NE SE SE sec. 29-4n-87w. S.D. 2,860 ft. on account of weather.

Weld County

The Continental Oil Co.'s deep test in the Buckingham area will be drilled on the State Bank tract in the E half section 21-8n-59w, about 3 miles north of the town of Buckingham. Exact location within the section has not yet been released. This puts it approximately 3 miles west of its No. 1 Anthes, C NE NE section 24-8n-59, which was abandoned at 6,658 feet in 1933, and 6 miles north of the Ramsey Petroleum Corp. No. 1 Tighe, SW NE SE section 15-7n-59, which gauged 6,000,000 feet of gas in the Muddy at 6,680-6,700 feet late in 1932. Last named well was drilled to 6,790 feet and had 6 feet of saturated Dakota sand followed by water. It made 40 bbls. first 24 hours from the top of the Dakota after plugging back. It then dropped to 20 bbls. the second 24 hours. It was then completed as a gas well in the Muddy. Manning & Martin, Inc., will have the drilling contract for the new test.

Washington County

The official location of the Indian Territory Illuminating Oil Co.'s test on the Hyde block is on the George Vorce tract in the C NE NE section 28-1s-49. It will be drilled jointly with the Foster Minerals Corp. The Olson Drilling Co. has the contract. The Arbuckle lime, the lowest objective, is expected at around 7,800 feet. If it becomes necessary to go to the Arbuckle, this test probably will establish a new depth record for Colorado. Deepest well so far drilled in the state is the Mountain Fuel Supply Co. No. 2 Wilson, C NE NE section 22-12n-100, on the Hiawatha dome, in Moffat County, which went to 7,577 feet in 1933. This well stopped in the Mesa Verde. This formation is eroded in eastern Colorado where the Indian Territory will drill. The company has 33,000 acres on the Hyde structure.

Indian Territory Ill. Oil Co. and Foster Minerals Corp. No. 1 Vorce, C NE NE sec. 28-1s-49w. M.I. rot. (first report).

Yuma County

The Indian Territory Illuminating Oil Co. location on the Beecher Island structure is on the Mildred Stranways tract in the C NW SW section 21-2s-43w. The Olson Drilling Co. has the contract. The lowest objective will be the Arbuckle lime at 6,500 feet. The company has 26,000 acres in the block.

Indian Territory Ill. Oil Co. No. 1 Strangways, C NW SW sec. 21-2s-43w. M.I. rot. equipment (first report).

WYOMING

Wyoming appears to be in line for one of the biggest exploration campaigns in its history in the near future and in reliable quarters it is stated that more major companies are paying attention to the state at present than at any time in the past. The explanation for this revival lies not only in the fact that important discoveries have been made in the last few years in deeper horizons than were explored in former drilling campaigns, but in the progress that has been made in locating pools.

A report prepared in 1928 by John G. Marzel, who was then state geologist, listed 372 known structures in Wyoming. This list included producing fields, untested domes and structures which had been tested by only one or two wells. Included were 109 domes which had not been drilled up to that time. At that time it was generally believed that all known

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structures with definite closure and with sands within reach of the drill had been explored and there was little incentive to the major companies to do much wildcatting. This situation has been changed.

The operators in the past generally passed up the structures in the Tertiary. Subsequent discoveries of oil in the Wasatch at Hiawatha has changed this outlook. The Wall Creek sands in the Frontier were the principal objectives. Many wells were drilled to that horizon and were abandoned after having small shows of oil or gas. A few discoveries have been made in the Dakota series in the lower Cretaceous, but in the past year or two big wells in the Sundance have been found in Lance Creek, at Medicine Bow and Rock River. Many structures previously tested to the Wall Creek now become attractive for deeper drilling, especially where small shows were encountered in the upper horizons. Improvements in drilling methods have overcome much of the former objection to deep tests and the rotary is becoming increasingly prominent in wildcatting.

Wildcatting in previous years was based largely on structures mapped by surface geology. The seismograph and other methods have shown in many instances that the surface axes and subsurface axes do not conform and that many of the wildcats of the past spotted on surface geology were not properly located. The result is that until operators go back and test the old domes under the improved methods that no one can say that Wyoming's possibilities have been exhausted.

Several of the major operators that took a fling at Wyoming in the past and pulled out are now coming back. These include the Standard Oil Co. of California, which has opened new pools since its return, the Union Oil Co. of California and the General Petroleum Corp. Among the newcomers are the Amerada Petroleum Corp., the Superior Oil Co., the Phillips Petroleum Co., and others. It is a noticeable fact that California companies are particularly active again not only in Wyoming but other Rocky Mountain states. One explanation of this is that the Rocky Mountain area is their nearest potential reserve for future supplies. Likewise, the Mid-Continent operators are looking with more favor upon the extension of their prospecting westward. Representatives from the two areas are meeting in this territory and it is not unlikely that in the Rocky Mountain states will be staged the big battle of the future for new oil field reserves.

Albany County

California Co. No. 3 Hoist, 1,650 ft. W of E line and 970 ft. N of S line, sec. 18-17n-77w. T.D. 3,295 ft.; redrlg. at 2,783 ft.

California Co. No. 1 Wilson, NW SW SW sec. 18-17n-76w. R.U.R. to resume at 1,010 ft.

Big Horn County

J. W. Bales No. 1 Parker, C SW SW sec. 23-4-89. S.D. 690 ft. for pipe.

Joan Oil Co. No. 1 Howell, Lot 63 (NW SE NE) sec. 32-55n-97w. Resuming at 1,190 ft.

Peter Evanhoff et al No. 1 McAllister, Lot 4, NW NE SE sec. 35n-87w. T.D. 2,350 ft.; C.O.

Ohio Oil Co. No. 1 Orson Vail, SW NW NE sec. 23-56n-97w. R.U.R.

Ohio Oil Co. No. 1 Robert Till, C SE SW sec. 24-56n-97w. Drlg. 2,452 ft.

Ohio Oil Co. No. 4 Byron Union, SW SW NE sec. 22-56-97. T.D. 5,735 ft.; Embar 5,587-5,710 ft.; top Tensleep at 5,710 ft.; sat. in top followed by water; P.B. to 5,719 ft.; cutting tubing frozen in cmt.

Montana-Wyoming Oil Co. No. 1 Allen, 270 ft. from N line, 930 ft. from E line, Lot 52 (SE NW SE) sec. 32-56n-97w. T.D. 3,835 ft.; well out of control and on fire; prep. to drill relief well.

Peay Oil Co. No. 1 Denio, Tract 43-C, sec. 15-55n-97w. T.D. 3,890 ft.; swbg. to locate wtr. leak in pipe.

J. H. Shaffer No. 1 Keachie, C SW SW sec. 5-49-61. T.D. 1,450 ft.; sdtrkg. tools at 1,366 ft.

Stock Oil Co. No. 1 Yates, CSL SW NE sec. 33-56n-97w. Bldg. drlk.

W. O. Taylor et al No. 1 Hoskins, Lot 5 (SE SE) sec. 25-56n-97w. Cg. at 5,270 ft. in Embar; showing sat.; top Embar 5,252 ft.

Campbell County

G. J. Sherin et al No. 1 Rhodes, NE SE C sec. 24-49n-74w. Drlk. up; sump and reservoir comp.; (cor. loc.).

Carbon County

The Ohio Oil Co., which is deepening a number of its old producers in the Dakota sands in the Rock River field, has another Sundance sand well in its No. 1 State, SE SE NE section 34-20-78. It was completed at 3,290 feet and swabbed 518 bbls. first 14 hours. Top of the Sundance was at 3,220 feet. It is ready to go on the pump.

General Pet. Corp. No. 1 Union Pacific, SW NW sec. 5-19n-83w. Spdg.

Ohio Oil Co. and California Co. No. 2 Union Pacific, C NE NE sec. 35-21n-79w. Drlg. 2,164 ft.

Ohio Oil Co. and California Co. No. 3 Union Pacific, C NE SE sec. 23-21n-79w. Drlg. 500 ft.

Ohio Oil Co. No. 9 H. & C., SW SW SW sec. 35-20n-78w. T.D. 3,102 ft.; redrlg at 3,095 ft.

Ohio Oil Co. No. 1 Dixon, NE NE SE sec. 34-20n-78w. O.W.D.D. from 2,934 ft.; R.U. (first report).

Ohio Oil Co. No. 2 Dixon, SE NE SE sec. 34-20n-78w. R.U. to deepen old well from 3,094 ft to Sundance.

Union Oil Co. of California and Mutual Oil Synd. No. 1 Union Pacific, 1,890 ft. from E line and 1,320 ft. from S line, sec. 1-15-78w. S.D. 4,440 ft.

Converse County

John Ackert No. 1 Daniels, SW SW NE sec. 17-32-71. S.D. 4,004 ft.

Chadron-Osage Oil Co. No. 1 State, SW SW SW sec. 16-32n-69w. Resuming; set 15½-in. at 1,500 ft.; will change to rotary at 2,500 ft.

J. A. Olson No. 1 Reese, C NE SE sec. 10-32n-65w. M.I.M. (first report).

Hot Springs County

California Exploration Co. No. 2 Government, NW SW NW sec. 4-44-96. T.D. 4,325 ft.; 6⅝-in. at 4,137 ft.; swbg. and bailing 4 bbls. wtr. and some oil.

Ohio Oil Co. No. 73 Mill Iron Cattle Co., NE SW SE sec. 19-4n-98w. Digging mud pits.

Stanolind O. & G. Co. No. 20 State-Ridgely, SE NE SE sec. 19-46n-98w. T.D. 3,931 ft.; top Embar 3,908 ft.; 6⅝-in. cmtd. 3,913 ft.; stdg.

Lincoln County

Senrab Oil Corp. No. 3 Government, CSL SE NW sec. 10-26n-113w. S.D. 1,020 ft.

Natrona County

Empire State Oil Co. No. 15, NW SE NE sec. 11-3n-83w. Drlg. 1,330 ft.

Niobrara County

The Argo Oil Co. has another good well in the Sundance in Lance Creek in its No. 6 Elliott, C SE NE section 5-35-65, a south offset to its No. 4 Elliott. It was drilled to 3,942 feet and flowed at the rate of 2,600 bbls. daily through the 7-inch casing at 3,864 feet, with 3,000,000 feet of gas. Tubing is being run. It topped the lower Sundance at 3,866 feet and the red beds at 3,920 feet.

The Ohio Oil Co. No. 5 Converse Sheep, reported to be the highest well on the structure in the Sundance, has become a mystery well. At last report it was in the top of the Sundance at 3,493 feet and since then the operator is no longer giving out information. It is reported that the well will be made into a deep test. No well has gone through the red beds in Lance Creek.

Argo Oil Co. No. 7 Elliott, C NE NW sec. 5-35n-65w. Drlg. 3,057 ft.

Black Hills Ref. Co. No. 1 Mills Est., C SW NW sec. 27-36n-64w. Spudded and S.D. account of weather.

Continental Oil Co. No. 6 Rohlff, C SW SW sec. 32-36n-65w. Bldg. rig.

Continental Oil Co. No. 1 Joss, 90 ft. E of C SW NE sec. 6-35n-65w. Cellar and pits.

J. H. Huber Co. No. 1 Jones, NE SE NW sec. 6-25n-65w. T.D. 4,096 ft.; P.B. to 4,032 ft.; pmpd. wtr. only for 3 days; made 350 bbls. fluid fourth day of which 280 bbls. was oil; testing.

Ohio Oil Co. No. 3 Agnes Rohlff, C SE NE sec. 32-36n-65w. Drlg. 3,523 ft.

Ohio Oil Co. No. 5 Converse Sheep, C SE SW sec. 32-36n-65w. Not reported; last depth 3,493 ft.

Ohio Oil Co. No. 3 Richards & Comstock, C NE SW sec. 32-36n-65w. Spudding.

S. & H. Dev. Co. No. 1-A Olinger, SE NE NW sec. 1-36-63. T.D. 1,674 ft.

Sheridan County

Beaver Creek Oil Co. No. 1 Allison, SW SE sec. 15-55n-85w. T.D. 3,050 ft.; fsg. lost joint 4½-in.

Uinta County

Bridger Basin Oil Co. No. 1-B, NW NW SWsec. 10-14n-118w. Resumed at 1,000 ft. (formerly Pacific Oil Co.).

Intermountain Pet. Corp. of Utah No. 1 Union Pacific-zayes, SW NW SW sec. 24-19n-118w. Drlg. 1,575 ft.

W. D. Marshall No. 1 Government, NW SW SE sec. 12-15n-118w. S.D. 1,260 ft.

Washakie County

Ariton & Doyle No. 1 Government, SW SW SE sec. 29-48-91w. S.D. 1,115 ft.

Wyoming O. & G. Co. No. 2 Government, SW SW SW sec. 31-48-90. T.D. 1,404 ft. (cor.); fsg. for tools.

Weston County

One completion was reported in the Osage field in the Des Moines-Osage Oil Co. No. 12, C NE NE section 25-46-64, which is swabbing and is estimated at 15 bbls. per day from sand at 1,418-43 feet.

Conway Oil Corp. No. 1, SE SE NE sec. 7-41n-60. Tools sidetrkd.; drlg. 2,100 ft.

H. D. Wiltse No. 9, NW NW NE sec. 17-46n-62w. Drlg. 200 ft.

Henry Egert No. 3, SW NW SE sec. 8-46n-63w. Drlg. 260 ft.

MONTANA

Big Horn County

Daniels Pet. Co. No. 1 May, C SE SE sec. 13-1s-33e. Drlg. 3,229 ft.

(Continued on Page 83)

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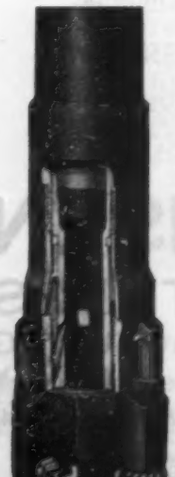

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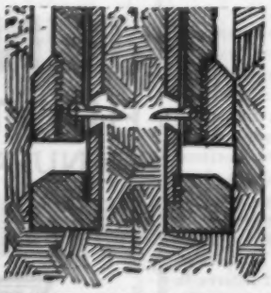

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East and East Central Texas

PALUXY FAILURE AT TALCO; DISCOVERY OFFSET STAKED

By L. E. BREDBERG

DALLAS, Tex., Apr. 20.—The new Talco pool in the northeast corner of Titus County, main subject of conversation in the East Texas district, saw the abandonment of one outpost test this week and staking of another location, with one Paluxy sand failure preparing to be carried to the lower producing member of the Trinity, the Glenrose.

Magnolia Petroleum Co., holding a west offset lease to the discovery of Peveto and others, has staked location and is moving in material for a Paluxy sand test 317 feet due west of the discovery, or 580 feet from the north and 158 feet from the east line of a 70-acre tract in the same survey. This is the first offset staked to the discovery. Many permits have been issued by the Railroad Commission for tests on leases, town lots and small tracts in the vicinity, but few locations have really been staked, it costing from $25,000 to $30,000 to dig a Paluxy sand hole. The wells too have been small and the oil 25.9 degrees, bringing only 60 cents per barrel according to the first posting of Humble Oil & Refining Co., the only buyer, which has a six-car loading rack on the Paris and Mount Pleasant branch line near Talco.

To Be Deepened

The first Paluxy sand failure, Humble Oil & Refining Co. No. 1 Groves, in the Ben Jones Survey, about 2 miles east of the discovery, did not log any Paluxy sand although it went to 4,492 feet, or nearly 300 feet deeper than the discovery. It set 8⅝-inch casing at 4,475 feet and is preparing to carry the hole presumably to the Glenrose from which production is found in Cayuga many miles south in Anderson County, and to the east in Rodessa.

Joiner No. 1 Lillianstern, in the William Gann Survey, about 4½ miles southeast of the discovery, was abandoned at a total depth of 4,487 feet. Elevation is 302 feet. It is the first Paluxy sand test in the area to be abandoned.

An interesting location southwest of the discovery, but over in Franklin County, was reported by B. A. LaSalle of Longview, on the A. L. Shipley farm in the F. M. Bates Survey, about 4 miles southwest of the discovery and 1½ miles southwest of the Highes and King extension well southwest of Talco. Contract calls for a 4,800-foot test. The extension well proved far better than the discovery, and as tests drilled east and southeast of the discovery proved failures in the Paluxy, it looks as if the pool will run west.

What appears another abandonment is Jules Alford No. 1 Fry, in the I. P. Stern Survey, nearly 2 miles south of the discovery. It has a fishing job and shut down at 4,340 feet. It apparently has also missed the Paluxy.

Daily Allowable for Talco

The Talco pool was given a daily allowable production of 300 bbls. this week by the Railroad Commission, or 150 bbls. per well.

Hager, Forrester and others No. 1 J. F. Woodward, 1½ miles southeast of Minter in Lamar County, is shut down at 4,273 feet after failing to pick up more than a small showing of gas in the Paluxy between 3,060-3,144 feet. Elevation is 402 feet.

Abercrombie & Harris have staked location 10 miles northeast of Clarksville for a test on lands owned by Temple Lumber Co. in the D. D. Bruton Survey. It will probably be a Paluxy sand test, and another for Red River County, about 2 miles northest of Dan F. Cleary No. 1 Mowery, which had a good oil showing last November. Another test is Orr and others No. 1 Kurth Lumber Co., credited with showing some gas and oil in core taken from 1,004-12 feet.

Deep Test for Leon

J. B. Daniel of the Daniel Oil & Royalty Co., which has two gas producers south of Turlington in Freestone County, has assembled 15,000 acres in a block in the Viesca, Grande and adjacent surveys in Leon County, and proposes a Trinity sand test. The block has been shot with geophysical instruments and majors and independents have taken protection in the area between Flynn and the Navasota River.

Pure Oil Co.'s interesting Ordovician test in southeastern Rusk County, on the Mount Enterprize block of some 12,000 acres, logged Pecan Gap chalk at 2,650-2,890 feet and the first broken Austin chalk at 3,283 feet, although samples on the latter have not yet been analyzed. The fault was cut through to the upthrow side in logging the Pecan. A protection string of 9⅝-inch casing was set and cemented at 3,482 feet in lime. The block is on a fault plane lying east and west.

Long Lake Sale

H. L. Hunt, independent operator of Arkansas and East Texas, has purchased 1,600 acres covered in 24 separate leases, one of which includes 57.5 acres in the John Adams Survey in the northeastern part of the Long Lake field in southwestern Anderson County. Standard of Kansas has one gas and one distillate producing well on the Robinson and Combs lands on this lease.

Wildcat for Kaufman

Scott and Whiteside have moved in a derrick on the E. Robinson farm in the A. Cherino Survey, 2 miles west of Curry in Kaufman County and are to start a Woodbine sand test. Rowley and others are preparing to drill on the Dean (Powell) lands in the Pedro Varelo Survey, 3½ miles south of Mexia in Limestone County, and are now rigging up. Two more tests are being drilled in the Powell field in Navarro County, by Thompson and Sitton, one on the J. S. Pugh lands in the James Smith Survey, and one on the S. Ramsey lands in the James Smith Survey. One test on this lease was abandoned at 1,322 feet this week by the same operators, one was abandoned near Wortham, at total depth of 3,646 feet and a small pumper was completed in the same area by Coffield and Guthrie.

East Texas Field

Production in the East Texas field was given another setback by the railroad commission when it cut the per well quotient from 2.85 to 2.78 per cent of the hourly potential, bringing the daily allowable down to around 440,000 bbls. The commission engineer's figures cited a 4.77-pound drop during the past month, or .346 pound per 1,000,000 bbls.

Pits Destroyed

Out of the 54 earthen pits in the East Texas field, 48 have been reported destroyed by order of the attorney general's department and the railroad commission. The pits had been emptied, the attorney general warning owners to destroy the remaining six pits. One pit was reported the size of two city blocks, near Gladewater in Gregg County. Some 61,000 bbls. of unknown or unclaimed pit oil has been confiscated and sold and tender given for movement by the railroad commission. The oil tested 26 degrees and was on the Robert Wood lease in the Augustine Survey, Gregg County.

There were 50 wells completed in the field this week, bringing the total to around 20,280 wells and making the per well density one well to each 6.35 acres. Operators overstepped the limits in four places this week registering as many dry holes, one in Smith County and three in Upshur County.

EAST TEXAS COMPLETIONS

Gregg County

Adkinson No. 1 Skipper, 3,571-3,572 feet, 20 bbls. in 20 minutes. Arkansas Fuel Oil Co. No. 13 Calvin, 3,535-3,560 feet, 27 bbls. in 15 minutes. Atlantic Oil Producing Co. No. 15 Harris, 3,496-3,550 feet, 110 bbls. per hour; No. 18 Prichard, 3,502-3,703 feet, 130 bbls. per hour. Humble Oil & Refining Co. No. 25 Armstrong, 3,566-3,588 feet, 25 bbls. in 17 minutes; No. 26 Armstrong, 3,566-3,589 feet, 72 bbls. per hour. Stanolind Oil & Gas Co. No. 7 Adrian-McCrary, 3,503-3,557 feet, 16 bbls. in 15 minutes; No. 10 Adrian-McCrary, 3,467-3,507 feet, 16 bbls. in 15 minutes; No. 10-A Smith, 3,505-3,543 feet, 12 bbls. in 15 minutes; No. 10-B Smith, 3,485-3,566 feet, 16 bbls. in 15 minutes. Texas Co. No. 7 Clark, 3,565-3,642 feet, 125 bbls. per hour. Tide Water Oil Co. No. 7-B Nettleson, 3,518-3,536 feet, 11 bbls. in 10 minutes through 1-inch choke. Arkansas Fuel Oil Co. No. 36 Hughey-Ross, 3,526-3,548 feet, 22 bbls. in 15 minutes. Beard No. 12 Elder, 3,460-3,492 feet, 20 bbls. in three hours on swab. Killiam-Solley No. 1 Allen, 3,665-3,667 feet, 150 bbls. in 24 hours, 2 per cent salt water. Magnolia Petroleum Co. No. 2 Still, 3,541-3,562 feet, 20 bbls. in 24 hours on pump. Rajo and Mercury No. 8 McComic, 3,694-3,695 feet, 27 bbls. per hour. Rutledge No. 1 Carr, 3,451-3,463 feet, 30 bbls. in 30 minutes. Shell Petroleum Corp. No. 31 Elder, 3,538-3,562 feet, 35 bbls. in 30 minutes; No. 32 Elder, 3,541-3,561 feet, 41 bbls. in 30 minutes. Sinclair Prairie Oil Co. No. 24 Andrews, 3,520-3,560 feet, 24 bbls. in 15 minutes; No. 56-A King, 3,520-3,560 feet, 24 bbls. in 15 minutes. Sun Oil Co. No. 7 Strong, 3,626-3,651 feet, 30 bbls. per hour. Weaver-Crim No. 14 Laird, 3,571-3,598 feet, 15 bbls. in 10 minutes through 1-inch choke.

Rusk County

Humble Oil & Refining Co. No. 171 Crim, 3,577-3,597 feet, 79 bbls. per hour; No. 78-B Laird, 3,490-3,589 feet, 20 bbls. per hour on gas lift; No. 11-C Sexton, 3,720-3,776 feet, 241 bbls. per hour. King and others No. 2 Florey, 3,637-3,638 feet, 10 bbls. in 10 minutes. Stephens, trustee, No. 2 Warren, 3,712-3,715 feet, 30 bbls. in 30 minutes. Tide Water Oil Co. No. 17-A Bean, 3,612-3,689 feet, 5 bbls. in 10 minutes. Davis and Hart No. 1 McDavis, 3,511-3,607 feet, 20 bbls. per hour on pump. Atlantic Oil Producing Co. No. 14-B Pinkston, 3,586-3,640 feet, 45 bbls. per hour. Magnolia Petroleum Co. No. 6 Deason, 3,670-3,709 feet, 9 bbls. in 15 minutes through 1-inch choke. Petroleum Marketing Co. No. 4 Graham, 3,660-3,664 feet, 40 bbls. per hour. Sinclair Prairie Oil Co. No. 20-B Mayfield, 3,611-3,621 feet, 24 bbls. in 15 minutes.

Smith County

Day No. 1 Atterbery, 3,783-3,784 feet, 20 bbls. in 20 minutes. Perry, receiver, No. 4 Bateman, 3,769-3,770 feet, 30 bbls. in 30 minutes. Sander No. 1 Wilson, dry and abandoned 3,820 feet. Sun Oil Co. No. 30-B Pace, 3,804-3,805 feet, 20 bbls. in 30 minutes.

Upshur County

Alger Oil Co. No. 10 Wells, 3,691-3,692 feet, 25 bbls. per hour. Barnett No. 1 Gilbert, dry and abandoned 3,812 feet, elevation 411 feet. Fields No. 9 Walker, 3,641-3,653 feet, 40 bbls. per hour. Gulf Oil Corp. No. 5 Ray,

3,582-3,588 feet, 20 bbls. per hour. Johnston No. 2 Williams, 3,700-3,717 feet, 10 bbls. in 30 minutes. Jones and Shelburne No. 5 Victory, dry and abandoned 1,500 feet. Nivla Oil Co. No. 2 Morgan, 3,710-3,711 feet, 51 bbls. in four hours. Southland and E. & W. No. 2 O'Byrne, 3,695-3,697 feet, 10 bbls. per hour. Stanolind and Falcon Oil Co. No. 1-E Everett, dry and abandoned 3,647 feet; No. 8-B Williams, 3,635-3,661 feet, 20 bbls. in 30 minutes. Sun Oil Co. No. 10 O'Byrne, 3,736-3,741 feet, 20 bbls. in 45 minutes.

Anderson County

Stanolind Oil & Gas Co. No. 4 Barton, total depth 4,075 feet, 130 bbls. in 24 hours through one-eighth inch choke. Tide Water and Seaboard Oil Corp. No. 4 Sullenberger, total depth 4,047 feet, 149 bbls. in 24 hours through one-eighth inch choke.

Navarro County

Coffield and Guthrie No. 1 Lovett, total depth 1,207 feet, 15 bbls. in 24 hours on pump. Riter and others No. 1 Bounds, dry and abandoned 3,646 feet, near Wortham. Thompson and Sitton No. 1 Ramsey, dry and abandoned 1,322 feet, in Powell field.

Titus County

O'Neal, trustee, No. 1 Lillianster, dry and abandoned 4,487 feet, elevation 302 feet, 4 miles southeast of Talco discovery.

Canadian Fields

(Continued from Page 64)

completed the purchase of small properties in the older part of the field with a view to further conservation of gas and more economical operation.

Production in the Turner Valley totaled 633,955 bbls. as compared with 717,501 bbls. in 1934. A new absorption plant was completed in the south end and by its operation the ratio of recovered naphtha to gas production was increased. Notwithstanding this higher ratio of recovery the total production of naphtha by Imperial subsidiaries was 83,546 bbls. less in 1935 than in 1934. This was in line with the company's policy of prolonging the life of the Turner Valley field. Purchases from other producers in the field amounted to 252,712 bbls. as compared with 253,142 bbls. in 1934.

Geological and geophysical work was carried on and resulted in the selection of two areas in Alberta on which drilling may later be begun. At the end of the year Imperial subsidiaries controlled 82 oil and gas wells in western Canada.

Eastern Fields

(Continued from Page 74)

liams Coal Co. and 854 feet in No. 263 and has a location for No. 264.

In Lincoln County, Eustace Gas Co. has made a location on the Owen Bias farm on Bias Branch of Lowther Two Mile Run in Sheridan district. In Duval district, United Fuel Gas Co. has part material for No. 4,621 Horse Creek Coal Land Co. on Horse Creek and is building rig for No. 4,622 on Laurel Fork. In Union district, it is down 1,800 feet in No. 4,606 on the James M. Ednor farm.

In Ritchie County, Moats & Richards are drilling on the Lucretia Ross farm on Bear Run in Grant district east of the Stout and Jackson lease. W. R. Carey has a rig on the Albert Metz farm, formerly the Rachel E. McLead. In Clay district, Lucas & Mahaney have a location on the Martin Loftus farm on Hushers Creek.

In Roane County, L. L. Reed and others are spudding on the B. F. Winters farm in Harper district and have location on the Joseph Fields and others lease, and on the J. R. Bonnett farm. In Smithfield district, Linden Drilling Co. is down 1,800 feet on the Thaniel Ferrell and others lease.

In Wayne County, Maebohn & Huffman have made a location on the Henry Mullens farm on Twelvepole Creek in Union district. V. L. Lusher has completed rig for No. 2 on his own property in this district.

VIRGINIA

In Virginia the test of Godfrey L. Cabot, Inc., on the Shawmutt National Bank lease in Buchanan County was dry. Big lime was at 2,474-2,938 feet; Berea sand at 3,565-3,600 feet and the shale at 4,640-4,825 feet.

Drilling Contractors

(Continued from Page 61)

depth will be attempted early in the week. In the Plymouth field east of this wildcat, Buchanan rigs brought in two producers for the Plymouth Oil Co. Other rigs are drilling in Loma Novia, Piedra Lumbre and Seven Sisters field in Duval County for the Humble Oil & Refining Co., Texas Co., Shell Petroleum Corp., Blanco Oil Co. and Mid-Continent Petroleum Corp. and one Duval County wildcat is coring sand for the Stanolind Oil & Gas Co. south of Seven Sisters.

Trinity Drillers, Inc., of San Antonio are drilling below 3,800 feet on a Victoria County wildcat for Rowan-Hope, and have spudded in on a test in Wharton County for the Texas Co. The S.R.C. Oil Co. No. 10-E Trevino was completed for a producer in the Escobas field of Zapata County, Southwest Texas, and the contractors are drilling No. 6-A Billings for Superior Oil Co. in the Lopez field of Webb County.

A. P. & G. Sale Ordered

DALLAS, Tex., Apr. 20.—Federal Judge William H. Atwell of Dallas has ordered the properties of the Atlantic, Pacific & Gulf Oil Co., formerly known as the Orient Refining Co. of Wichita Falls, be sold May 5 to satisfy claims against it. Receivers certificates against the properties totaled $225,000. Other expenses included taxes and administration costs. Sale will be conducted by Leslie Humphrey, receiver.

The plant was placed in receivership in 1931. In 1934 the sale of the properties was ordered by Judge Atwell. Thereafter a reorganization was begun, while bankruptcy proceedings were filed in Kansas City, which halted the sale temporarily.

C. W. Tomlinson, geologist of Ardmore, Okla., addressed the Dallas petroleum geologists in Dallas, Tex., on the evening of April 13. He discussed the geology of southern Oklahoma.

E. A. Ungren and Art Frazier, independent producers of Abilene, Tex., have just purchased a new plane for rapid commuting. Paul Stanbaugh is their pilot.

California Oil Field Operations for February, 1936

Total stocks of crude and all products in Pacific Coast territory increased during the month 1,456,466 bbls. The total stocks at the end of the month were 136,527,474 bbls. The total stock increase for 1936, up to February 29, was 5,898,828 bbls.

CRUDE PETROLEUM PRODUCTION

(Figures of production and stocks are in barrels of 42 gals.)

	Total production February	Daily production		
		Feb., 1936	Jan., 1936	Feb., 1935
Group No. 1:				
Belridge-North	244,570	8,434	9,578	5,686
Belridge-South	61,298	2,114	2,304	2,471
Coalinga	528,066	18,209	21,326	19,419
Edison	149,445	5,153	5,561	1,014
Elk Hills	256,748	8,853	9,708	9,322
Fruitvale	198,773	6,854	7,470	3,784
Kern River	417,745	14,405	16,457	10,913
Kettleman Middle Dome	12,463	430	416	442
Kettleman North Dome	2,316,362	79,875	96,780	67,335
Lost Hills	118,335	4,081	4,667	4,840
McKittrick	105,158	3,626	4,194	3,154
Midway-Sunset	1,554,364	53,599	62,096	53,822
Mountain View	919,315	31,697	36,018	14,040
Mount Poso	546,303	18,838	22,527	11,930
Round Mountain	262,774	9,061	10,210	4,893
Wheeler Ridge	10,388	358	409	421
Group No. 2:				
Capitan	40,324	1,390	1,849	872
Elwood	368,312	12,700	16,109	9,496
Rincon	53,933	1,860	2,071	1,415
San Miguelito	29,903	1,031	1,850	691
Santa Barbara	48,762	1,681	2,170	4,077
Santa Maria	103,394	3,565	4,027	4,643
Summerland	873	30	36	45
Ventura Avenue	985,453	33,981	40,520	23,326
Ventura-Newhall	117,781	4,061	4,283	4,010
Watsonville	1,740	60	60	60
Group No. 3:				
Brea-Olinda	217,642	7,505	9,984	9,870
Coyote-East	67,194	2,317	2,771	2,669
Coyote-West	239,682	8,265	10,426	9,061
Dominguez	895,774	30,889	38,610	19,224
Huntington Beach	1,076,760	37,130	41,239	39,082
Inglewood	354,206	12,214	15,433	9,969
Lawndale	7,285	251	270	126
Long Beach	2,068,817	71,321	77,838	65,834
Los Angeles-Salt Lake	23,057	795	747	769
Montebello	201,583	6,951	7,977	5,984
Newport	.....	.....	.....	.....
Playa Del Rey	396,874	13,685	16,164	8,989
Potrero	9,954	343	332	402
Richfield	186,914	6,445	8,238	7,924
Rosecrans	60,139	2,074	2,737	2,874
Santa Fe Springs	1,282,781	44,234	53,740	27,769
Seal Beach	274,688	9,469	11,187	9,224
Torrance	192,295	6,631	6,864	6,716
Whittier	27,913	963	1,035	982
Total	17,035,430	587,428	680,097	498,538
January	21,083,006	680,097		
Decrease	4,047,576	92,669		

OIL FIELD DEVELOPMENT

	New rigs up	Active drilling	Producers completed	Daily initial output	Active producing	Abandoned wells: Drillers	Abandoned wells: Producers
Group No. 1:							
Belridge-North	...	7	...	.....	31	...	...
Belridge-South	...	...	...	.....	169	...	...
Coalinga	1	6	1	20	976	...	1
Edison	7	4	4	558	65	3	1
Elk Hills	...	...	...	.....	167	...	...
Fruitvale	4	7	3	624	85	2	1
Kern River	7	5	4	574	1,491	...	...
Kettleman Middle Dome	...	2	...	.....	3	...	...
Kettleman North Dome	7	29	3	2,477	113	...	1
Lost Hills	...	1	...	.....	309	1	...
McKittrick	2	2	...	.....	201	...	...
Midway-Sunset	5	9	5	1,153	2,462	2	...
Mountain View	6	17	1	680	129	...	1
Mount Poso	3	5	1	400	200	2	...
Round Mountain	8	4	5	2,318	82	...	...
Wheeler Ridge	...	1	...	.....	34	...	...
Group No. 2:							
Capitan	1	1	1	54	19	...	...
Elwood	...	2	...	.....	65	1	...
Rincon	...	1	...	.....	29	1	1
San Miguelito	...	...	1	475	6	...	...
Santa Barbara	1	...	1	125	64	...	3
Santa Maria	2	1	...	.....	204	...	1
Summerland	...	...	...	.....	19	...	...
Ventura Avenue	1	5	2	152	244	...	...
Ventura-Newhall	2	12	1	161	563	...	...
Watsonville	...	...	...	.....	7	...	...
Group No. 3:							
Brea-Olinda	...	...	...	.....	359	...	1
Coyote-East	...	...	...	.....	82	...	...
Coyote-West	...	1	...	.....	85	...	...
Dominguez	1	4	3	1,489	124	...	...
Huntington Beach	...	5	...	.....	516	...	3
Inglewood	1	1	...	.....	215	...	...
Lawndale	...	3	...	.....	7	...	...
Long Beach	...	7	4	453	1,270	9	6
Los Angeles-Salt Lake	...	...	...	.....	127	...	1
Montebello	5	11	1	1,540	195	...	...
Newport	...	1	...	.....	.....	...	...
Playa Del Rey	1	5	...	.....	210	1	...
Potrero	...	...	...	.....	11	...	1
Richfield	...	2	...	.....	262	...	4
Rosecrans	...	...	...	.....	76	...	...
Santa Fe Springs	1	5	1	76	638	...	6
Seal Beach	...	1	...	.....	121	...	1
Torrance	...	1	1	240	508	...	3
Whittier	...	...	...	.....	161	1	...
Miscellaneous drilling	8	37	...	.....	.....	11	...
Group No. 4—Gas Fields:							
Buttonwillow	...	...	...	.....	34	...	...
Delano	...	1	...	.....	.....	...	...
Dudley Ridge	...	1	...	.....	.....	...	...
Goleta	...	...	...	.....	.....	...	...
Semi-Tropic	...	...	...	.....	.....	...	...
Tracy	1	1	...	.....	3	...	...
February	73	208	43	18,561	12,691	34	35
January	87	204	71	34,687	12,766	31	8
Decrease	14	*4	28	21,126	75	*3	*27
Average for year 1935	86	243	64	56,082	12,136	29	17
Average for year 1934	53	196	38	47,553	11,053	21	17
Average for year 1933	30	124	21	22,842	9,199	14	13

*Increase.

Federal Gasoline Tax Is Direct Burden on Farmers, Business and Industry

Of the total revenue received by all of the taxing jurisdictions of our government, national, state and local, the taxes levied on the sales of gasoline produce approximately one-twelfth of the total revenue raised in the United States.

There are 182,651 governmental units in the United States which exercise the sovereign power to tax the citizen, his properties, his business, and his income. The aggregate annual tax revenue levied and raised by all of these taxing jurisdictions amounts to approximately $10,000,000,000. The aggregate expenditures of these governmental jurisdictions amounts to approximately $15,000,000,000. The difference is made up by loans and not by taxes.

In view of the extremely large number of taxing jurisdictions and the many ramified problems of government revenue and expenditures, it is exceedingly significant that when the collection of all taxes is considered, whether direct or indirect, specific or ad valorem, customs or excise, or property or income, the sales tax levied upon one single item of commerce, namely, gasoline, produces approximately one-twelfth of all the revenue raised annually in these United States.

In the year 1935 it is estimated that state gasoline taxes produced revenue for the states totaling $625,000,000, while the federal government's tax produced revenue in excess of $170,000,000.

The federal gasoline tax is called an "excise tax," and while it is collected at the refinery instead of at the filling station, it is none the less a sales tax and must be passed on to the consumer of the gasoline. Every time any citizen of the United States buys 10 gallons of gasoline, he pays 10 cents to the federal government as a tax, whether he knows it or not. This is not only an extremely heavy burden, but it is also an added burden to all who operate private cars, trucks, tractors, buses and other forms of automotive transportation. There is no rebate of the federal tax to the farmer or to anybody else, such as is the case in many state gasoline taxes that are levied.

To illustrate the effect of the federal gasoline tax upon the citizen of any given area, it is only necessary to consider any given state and observe the state burden upon users of automotive units in that state, and then observe the added burden caused by the federal gasoline tax. The state of Oklahoma is a case in point.

Oklahoma as Example

Oklahoma is one of the leading oil states in the union and, in 1935, it supplied 185,348,000 bbls., or 18.65 per cent of the total crude oil produced in the United States. Oklahoma refineries ran to stills 57,442,000 bbls. of crude oil, or 5.94 per cent of the total crude oil refined in the nation. Every citizen in the state is either indirectly or directly a recipient of the economic betterment brought about by the wealth-producing operations of the industry and, as a consequence, every citizen in the state is interested in the welfare of the petroleum industry. Truly, Oklahoma is one of the predominate oil states of the Union.

The people of the state of Oklahoma, according to the best records available at this time, consumed approximately 327,500,000 gallons of gasoline during the year 1935, on which federal gasoline taxes were paid in the round amount of $3,200,000. Of this amount, it is roundly estimated that Oklahoma farmers paid approximately $910,000 in federal taxes, while other citizens and motor users in the state contributed the balance, or $2,290,000 in federal gasoline taxes.

There are approximately 140,000 cars and trucks on Oklahoma farms. Under the Oklahoma state gasoline tax law, farmers residing within the state can secure a refund of the state tax on gasoline used in tractors, stationary engines, etc., when same are used strictly for agricultural purposes. The Oklahoma Tax Commission reports that in the year 1935 there were 21,136,730 gallons of gasoline exempted from the state tax for such purposes. Despite this assistance to the farmers of Oklahoma by the state itself, these same Oklahoma farmers paid over $211,000 in federal gasoline taxes on the gasoline from which they were exempted in paying a state tax.

It is roughly estimated that the cars and trucks on Oklahoma farms consumed 70,000,000 gallons of gasoline last year, for which they were not exempt the state tax. Therefore, roughly the total consumption of gasoline by the farmers of the state of Oklahoma was approximately 91,000,000 gallons. If these figures are roughly correct, Oklahoma farmers then paid approximately $910,000 in 1935 in gasoline taxes to the federal government.

Roughly speaking, the farmers of the United States, in carrying on their business and in the use of their private cars, consume approximately one-fourth of all the gasoline sold each year. Therefore, they pay approximately one-fourth of the annual federal gasoline tax bill, or $43,000,000. This is an immense sum, and its payment by the farmer constitutes one more exceedingly heavy burden which he has been called upon to bear in these recent "lean years." Thus it is, that the repeal of the federal gasoline tax would, in itself, be quite an item of "farm relief" to the farmers of the state of Oklahoma, and similarly, to the farmers of every other state in the nation.

Indirect Burden, Too

In addition to being a direct burden on the farmers and motorists of the state, the federal gasoline tax is also an indirect burden on two of Oklahoma's leading industries, namely, petroleum production and petroleum refining. It is further an indirect burden on every citizen who owns an acre of oil land or who owns a dollar's worth of oil royalty. It is an indirect burden on every citizen who owns stock in any oil company, whether such company be engaged in producing crude oil, transporting crude oil, refining crude oil, or marketing the products from the industry. It is especially an indirect burden on every person who owns or operates a service station, because in the eventual long run, the demand for the product sold at the station is decreased due to the higher cost to the consumer for each gallon which he purchases.

The gasoline tax creates other problems with which the filling station operator must deal. Most important of these is tax evasion and the consequent "price-cutter." The tax evasion scandals just brought to light in Colorado and Tennessee furnish ample evidence that evasion is a serious problem. These situations show clearly that unreasonable and excessive gasoline tax rates invite tax evasion and avoidance, and that legitimate marketers who pay their gasoline taxes are placed at a competitive disadvantage. Every cent added to the total gasoline tax paid by the consumer makes this condition just that much worse. Studies made by automotive associations show that the money spent for gasoline amounts to approximately 40 per cent of the cost of operating a car. Since the tax comprises more than one-third of the price the motorist pays for his gasoline, it is evident that the gasoline tax is an item of great importance to every car owner which, in turn, indicates that there might be every inducement for the motorist to patronize the "price-cutter."

Oklahoma refineries produced 33,288,000 bbls., or 1,398,096,000 gallons, of gasoline in 1935. Making allowance for exempt gasoline (sales to governmental units and for export), the federal gasoline tax on the total amount of gasoline manufactured within the borders of Oklahoma amounted to approximately $13,000,000. It is further estimated that the federal tax payable on all gasoline made from all crude and natural gasoline produced in Oklahoma, whether said crude was refined in Oklahoma or elsewhere, amounts to approximately $40,000,000 annually. Reviewing these figures, it is ostensible that the importance of such a tax load cannot but fail to curtail the demand for the output of Oklahoma refineries and oil wells.

We find consumers and retail merchants vigorously protesting sales taxes of 1 and 2 per cent. These protests are heard throughout the land. However, at present prices in Oklahoma, the 1 cent federal gasoline tax is, in effect, a 7 per cent retail sales tax upon gasoline. This is all in addition to the Oklahoma gasoline tax, which approximates a sales tax of over 30 per cent. As a consequence, motorists in Oklahoma are paying a sales tax of almost 40 per cent upon the gasoline they purchase.

The average price of U. S. motor gasoline (63-70 octane—regular) in 1935 at Oklahoma refineries was approximately 5.3 cents per gallon, and for third grade gasoline (62 octane and below) the average was approximately 4.5 cents per gallon. Very little premium grades of gasoline are now sold, so the average price of all gasoline at Oklahoma refineries in 1935 was probably not more than 5 cents per gallon. On this basis the federal gasoline tax of 1 cent per gallon constituted a manufacturers excise tax of 20 per cent—on an essential and necessary commodity purchased by Oklahoma citizens.

While the federal gasoline tax is paid directly by the manufacturer, it is paid by the final consumer in the last instance. As the tax increases and thus the consequent price to the consumer increases, sales resistance is increased because the consumer is able to buy less gasoline with the same amount of money. Sales fall off and prices have a tendency to weaken and thus again the federal gasoline tax affects the refiner and also, in turn, the crude oil producer.

Effect on Demand

Studies and analyses made by the American Petroleum Industries Committee, by comparing the consumption of gasoline in states that have increased the tax with the consumption in other states of similar geographic and economic conditions and structure, indicate that each 1 cent increase in the gasoline tax results in a 5 per cent decrease in gasoline consumption.

Assuming the correctness of these figures, it is thus estimated that, had it not been for the 1 cent federal tax on gasoline in 1935:

The revenue of Oklahoma oil producers would have been greater by $8,750,000.

The revenue of Oklahoma royalty owners would have been greater by $1,250.000.

The gross income of Oklahoma refineries would have been greater by $3,675.000.

The net income of Oklahoma filling stations would have been greater by $500,000.

And the gasoline tax revenue to the state would have been greater by $625,000.

Had the revenue of Oklahoma producers and refiners been increased by the above amounts, probably only a small part of it would have gone to profits. However, the increased production and refining activities would have brought about increased employment, increased expenditures for supplies and other products, and would generally have benefitted the state as a whole.

The repeal of this tax would be a stimulant to business and industry, and would assist in speeding economic recovery in Oklahoma, as well as in every other state in the Union.

Summary of Operations, All Fields, January

SUMMARY OF ALL FIELDS
Wells Completed

Field—	Comp.	Prod.	Dry	Gas
Eastern	202	548	17	31
Central Ohio	20	86	4	13
Lima	8	16	2	3
Indiana	19	53	9	6
Michigan	41	5,940	16	6
Kentucky	20	684	8	2
Kansas	120	93,361	25	8
Oklahoma	217	165,866	59	18
North Central Texas	195	10,570	89	2
East Central Texas	21	456	13	2
East Texas	209	7,459	5	0
West Texas	107	38,987	15	4
Panhandle Texas	65	24,751	2	16
Gulf Coast Texas	73	21,959	19	3
Gulf Coast Louisiana	28	8,508	11	2
Southwest Texas	152	36,910	30	3
North Louisiana	43	33,400	10	4
Arkansas	12	1,160	10	0
Montana	12	2,264	1	2
Wyoming	8	7,292	1	0
Colorado	3	35	2	0
New Mexico	33	31,494	1	3
Utah	1	0	1	0
Total January	1,609	496,799	353	128
Total December	1,567	423,539	353	125
Difference	42	63,260	0	3

SUMMARY OF ALL FIELDS
Rigs and Wells Drilling

	Rigs	Dlg.	Ttl.
Eastern	54	268	322
Central Ohio	27	69	96
Lima	2	31	33
Indiana	0	50	50
Michigan	70	94	164
Kentucky	3	11	14
Illinois	0	8	8
Kansas	57	248	305
Oklahoma	59	461	520
North Central Texas	76	230	306
East Central Texas	19	46	65
East Texas	60	149	209
East Texas gas area	9	13	22
West Texas	61	222	283
Panhandle Texas	38	134	172
Gulf Coast Texas	36	114	150
Gulf Coast Louisiana	15	57	72
Southwest Texas	44	155	199
North Louisiana	26	86	112
Arkansas	14	29	43
Mississippi	0	10	10
Alabama	0	3	3
Montana	10	56	66
Wyoming	6	57	63
Colorado	4	28	32
New Mexico	12	97	109
Utah	1	11	12
Total January	703	2,737	3,440
Total December	698	2,801	3,499
Difference	5	64	59

KANSAS
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Barton	13	5,827	6	0	8	15	23
Butler	9	827	1	0	1	7	8
Chase	0	0	0	0	0	1	1
Clark	1	0	1	0	0	0	0
Coffey	2	100	0	0	0	3	3
Cowley	8	1,979	1	1	7	17	24
Dickinson	0	0	0	0	0	1	1
Ellis	3	3,754	0	0	5	4	9
Ellsworth	5	2,071	3	0	2	5	7
Graham	0	0	0	0	0	2	2
Greenwood	9	252	1	0	2	11	13
Harper	0	0	0	0	0	1	1
Harvey	2	0	0	2	2	9	11
Haskell	0	0	0	0	0	2	2
Kingman	2	136	1	0	0	1	1
Morris	0	0	0	0	0	1	1
Marion	0	0	0	0	1	1	2
McPherson	5	743	0	0	3	5	8
Norton	0	0	0	0	0	2	2
Osage	0	0	0	0	0	1	1
Pratt	0	0	0	0	0	3	3
Reno	5	6,286	1	1	4	22	26
Rice	14	10,595	3	0	3	40	43
Rooks	0	0	0	0	0	4	4
Rush	3	0	0	3	1	2	3
Russell	15	6,775	3	0	13	44	57
Scott	0	0	0	0	0	1	1
Sedgwick	1	0	1	0	1	5	6
Stafford	1	835	0	0	0	5	5
Stevens	1	0	0	1	0	2	2
Sumner	15	51,642	1	0	3	32	35
Trego	0	0	0	0	1	3	4
Woodson	6	1,638	2	0	0	6	6
Total Jan.	120	93,361	25	8	57	248	305
Total Dec.	85	43,493	22	2	44	224	278
Difference	35	49,868	3	6	13	14	27

OKLAHOMA
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Alfalfa	0	0	0	0	0	1	1
Atoka	1	0	1	0	0	4	4
Beaver	0	0	0	0	0	1	1
Beckham	1	0	1	0	1	1	2
Blaine	0	0	0	0	0	1	1
Bryan	0	0	0	0	1	1	2
Caddo	2	0	1	1	1	5	6
Carter	10	521	2	0	2	21	23
Choctaw	0	0	0	0	0	2	2
Cleveland	1	0	1	0	0	3	3
Coal	0	0	0	0	1	2	3
Comanche	4	0	2	2	1	11	17
Cotton	3	4	2	0	0	1	1
Creek	14	228	7	1	5	34	39
Garfield	2	0	2	0	0	2	2
Garvin	2	0	2	0	0	3	3
Grady	0	0	0	0	1	4	5
Grant	1	0	1	0	0	2	2
Harmon	0	0	0	0	0	2	2
Hughes	20	5,577	1	0	2	15	17
Jackson	4	196	2	0	0	9	9
Jefferson	3	20	1	0	0	4	4
Johnston	1	0	1	0	0	1	1
Kay	4	0	3	1	1	5	6
Kiowa	0	0	0	0	0	5	5
LeFlore	0	0	0	0	0	1	1
Lincoln	4	2,646	0	0	1	10	11
Logan	1	0	1	0	0	13	13
Love	0	0	0	0	1	2	3
Marshall	3	87	0	0	0	10	10
McClain	0	0	0	0	0	1	1
McIntosh	0	0	0	0	0	2	2
Murray	0	0	0	0	0	1	1
Muskogee	0	0	0	0	0	7	7
Noble	3	4,107	1	0	2	8	10
Okfuskee	5	790	1	1	2	20	22
Oklahoma	21	*93,308	0	0	4	21	25
Okmulgee	17	270	7	3	1	11	12
Osage	18	13,150	4	2	16	43	59
Pawnee	1	42	0	0	0	1	1
Payne	2	1,716	0	0	0	3	3
Pittsburg	1	0	1	0	0	2	2
Pontotoc	28	34,326	3	4	8	70	78
Pottawatomie	4	1,398	1	0	0	9	9
Pushmataha	0	0	0	0	0	1	1
Roger Mills	0	0	0	0	0	1	1
Seminole	23	7,447	5	1	6	43	49
Stephens	9	22	3	2	0	16	16
Tillman	1	1	1	0	1	2	3
Tulsa	2	110	0	0	1	15	16
Wagoner	1	0	1	0	0	7	7
Washita	0	0	0	0	0	1	1
Ttl. Jan.	217	165,866	59	18	59	461	520
Ttl. Dec.	157	105,273	42	11	61	508	569
Difference	60	60,593	17	7	2	47	49

*Represents potential production.

GULF COAST
Texas
Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs	Dlg.	Ttl
Anahuac	9	5,214	0	0	5	6	11
Barbers Hill	0	0	0	0	1	6	7
Batson	4	714	2	0	1	2	3
Bay City	0	0	0	0	3	0	3
Big Hill	0	0	0	0	0	1	1
Big Creek	2	0	2	0	1	1	2
Blue Ridge	2	720	0	0	0	2	2
Boling	1	289	0	0	0	0	0
Clay Creek	1	0	1	0	0	1	1
Cleveland	1	28	0	0	1	0	1
Coletto Creek	0	0	0	0	1	0	1
Conroe	1	328	0	0	0	1	1
Dickinson	1	0	1	0	2	6	8
Esperson	1	264	0	0	0	3	3
Fannett	0	0	0	0	0	2	2
Greta	0	0	0	0	0	2	2
Hankamer	2	55	1	0	0	1	1
Hastings	5	2,708	0	0	1	5	6
High Island	0	0	0	0	1	4	5
Hull	1	0	1	0	0	1	1
Humble	2	482	0	0	0	1	1
Livingston	3	766	0	0	0	3	3
Lost Lake	0	0	0	0	1	0	1
Louise	1	24	0	0	0	1	1
Manvel	3	979	1	0	1	3	4
Markham	1	70	0	0	1	0	1
Mykawa	2	984	0	0	1	0	1
Orchard	0	0	0	0	0	3	3
Pickett Ridge	2	1,032	0	0	1	1	2
Pierce Junction	2	1,180	0	0	1	1	2
Placedo	4	466	0	0	3	6	9
Port Neches	1	0	1	0	0	1	1
Raccoon Bend	2	1,319	0	0	0	2	2
Refugio	1	768	0	0	0	0	0
Saratoga	1	79	0	0	0	2	2
S. Houston	0	0	0	0	1	3	4
Thompson	1	1,418	0	0	0	0	0
Tomball	6	1,452	0	3	0	5	5
Tomoconner	0	0	0	0	1	2	3
Turtle Bay	0	0	0	0	0	1	1
Withers	1	400	0	0	0	1	1
Misc.	9	0	9	0	8	34	42
Total Jan.	73	21,959	19	3	36	114	150
Total Dec.	100	26,694	28	5	30	107	137
Difference	27	4,735	9	2	6	7	13

Louisiana

Bay St. Elaine	0	0	0	0	0	1	1
Bayou Mallet	1	0	0	1	0	1	1
Big Lake	1	0	0	1	0	0	0
Black Bayou	2	928	0	0	0	2	2
Caillou Isl.	0	0	0	0	0	1	1
Cameron Meadows	1	266	0	0	1	1	2
Chenevville	0	0	0	0	1	1	2
Choctaw	0	0	0	0	0	1	1
Darrow	1	0	1	0	0	1	1
Edgerly	1	26	0	0	0	0	0
Four Isle	1	0	1	0	0	0	0
Garden Isl.	0	0	0	0	0	1	1
Gillis	4	2,430	0	0	2	4	7
Gueydan	0	0	0	0	0	1	1
Hackberry	0	0	0	0	0	2	4
Iowa	0	0	0	0	0	1	1
Jeanerette	0	0	0	0	0	1	0
Jennings	0	0	0	0	0	0	2
Lafitte	0	0	0	0	0	0	2
Lake Barre	0	0	0	0	0	0	1
Lake Hermitage	0	0	0	0	0	1	1
Lake Pelto	0	0	0	0	0	1	1
Leesville	2	1,327	0	0	0	1	1
New Iberia	1	0	1	0	0	1	1
Lake Barre	0	0	0	0	0	1	1
Roanoke	1	0	1	0	0	3	3
St. Martinsville	0	0	0	0	0	3	3
Sorrento	1	672	0	0	0	0	0
Starks	1	98	0	0	0	1	1
Sulphur	3	2,247	1	0	1	0	1
Sweet Lake	0	0	0	0	0	1	1
Tepetate	2	610	1	0	1	2	3
Vinton	0	0	0	0	0	1	1
White Castle	1	0	1	0	0	0	0
Misc.	3	0	3	0	3	15	18
Total Jan.	28	8,508	11	2	15	57	72
Total Dec.	28	12,059	8	0	16	68	84
Difference	0	3,551	3	2	1	11	12

Total Gulf Coast:

January	101	30,467	30	5	51	171	222

WEST TEXAS
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Andrews	2	731	0	1	0	3	3
Borden	1	0	1	0	0	1	1
Brewster	1	0	1	0	0	2	2
Concho	0	0	0	0	0	2	2
Crane	2	601	1	0	5	13	18
Crockett	0	0	0	0	1	4	5
Culberson	0	0	0	0	0	1	1
Dawson	0	0	0	0	0	1	1
Ector	9	3,512	1	0	4	11	15
Edwards	0	0	0	0	0	3	3
El Paso	0	0	0	0	0	2	2
Fisher	4	445	2	0	2	7	9
Gaines	0	0	0	0	0	2	2
Garza	1	0	1	0	0	1	1
Glasscock	0	0	0	0	0	3	3
Howard	15	6,891	2	0	5	12	17
Hudspeth	0	0	0	0	0	1	1
Irion	0	0	0	0	0	1	1
Jeff Davis	0	0	0	0	0	1	1
Jones	7	370	4	0	3	16	19
Loving	0	0	0	0	0	2	2
Martin	0	0	0	0	0	2	2
Menard	0	0	0	0	0	1	1
Mitchell	2	10	1	0	0	1	1
Nolan	0	0	0	0	0	1	1
Pecos	13	5,845	3	1	4	27	31
Presidio	0	0	0	0	0	1	1
Reagan	2	70	0	0	1	1	2
Reeves	1	0	1	0	0	1	1
Runnels	0	0	0	0	1	2	3
Schleicher	0	0	0	0	0	2	2
Scurry	0	0	0	0	1	2	3
Taylor	0	0	0	0	0	2	2
Terrell	0	0	0	0	0	1	1
Tom Green	0	0	0	0	0	2	2
Upton	7	1,852	0	0	2	15	17
Ward	19	7,774	0	0	8	30	38
Winkler	21	10,886	0	2	24	42	66
Total Jan.	107	38,987	18	4	61	222	283
Total Dec.	76	27,218	12	2	58	224	283
Difference	31	11,769	6	2	3	2	0

EAST TEXAS
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Anderson	5	410	0	2	2	10	12
Angelina	1	0	1	0	0	3	3
Bowie	0	0	0	0	1	1	2
Cherokee	1	0	1	0	2	1	3
Ellis	0	0	0	0	0	1	1
Falls	0	0	0	0	0	1	1
Fannin	1	0	1	0	0	4	4
Freestone	0	0	0	0	0	1	1
Gregg	57	2,662	2	0	21	46	67
Henderson	1	0	1	0	2	3	5
Hill	1	0	1	0	0	0	0
Hunt	1	0	1	0	0	0	0
Kaufman	0	0	0	0	0	2	2
Lamar	1	0	1	0	6	3	9
Limestone	1	5	0	0	1	2	3
McLennan	0	0	0	0	1	1	2
Morris	1	0	1	0	0	0	0
Nacogdoches	1	0	1	0	0	0	0
Navarro	5	46	3	0	0	1	1
Rains	0	0	0	0	0	1	1
Red River	1	0	1	0	1	3	4
Rockwall	0	0	0	0	0	1	1
Rusk	75	3,116	0	0	31	67	98
Smith	23	973	0	0	3	16	19
Titus	0	0	0	0	1	1	2
Upshur	23	708	2	0	3	19	22
Van Zandt	1	1	1	0	4	6	10
Wood	0	0	0	0	0	1	1
Total Jan.	230	7,915	18	2	79	195	274
Total Dec.	269	10,525	14	1	108	177	276
Difference	39	2,610	4	1	29	18	2

SOUTHWEST TEXAS
Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs	Dlg.	Ttl
Armagosa	1	0	0	1	0	0	0
Baldwin	1	0	1	0	0	1	1
Caesar	2	120	1	0	0	1	1
Calliham	1	20	0	0	2	1	3
Carolina-Texas	0	0	0	0	0	2	2
Charamousca	0	0	0	0	0	1	1
Clark	1	50	0	0	0	0	0
Cole	1	100	0	0	0	2	2
Dale	0	0	1	0	0	0	0
Dirks	10	4,720	0	0	0	2	2
Eagle Hill	0	0	0	0	0	2	2
Eckert	0	0	0	0	0	1	1
Escobas	1	50	0	0	0	1	1
Fort Merrill	1	240	0	0	0	0	0
Govt. Wells	2	30	0	0	0	1	1
Guerra	1	0	1	0	0	1	1
Haynes	2	70	0	0	0	1	1
Hords Creek	1	0	1	0	0	0	0
Jacob	1	0	1	0	0	0	0
Kohler	1	0	1	0	0	0	0
Loma Novia	41	7,230	1	1	4	19	23
Lopez	11	4,720	1	0	1	7	8
McNeill	0	0	0	0	0	1	1
Mercedes	2	842	0	0	0	1	1
O'Hern	8	2,140	0	0	0	4	4
Pearsall	1	2,450	0	2	2	1	5
Piedra Lumbre	2	100	0	0	0	1	1
Plummer	1	0	1	0	0	0	0
Plymouth	7	1,840	1	0	0	7	7
Rio Grande City	2	20	1	0	0	0	0
Samfordyce	6	470	0	0	2	4	6
Sandia	0	0	0	0	0	1	1
San Diego	0	0	0	0	0	1	1
Sarnosa	0	0	0	0	0	1	1
Saxet	2	340	0	0	0	1	1
Saxet Hgts.	3	2,190	0	0	0	4	4
Seven Sisters	18	8,690	0	0	0	7	7
Taft	0	0	0	0	0	14	14
Von Ormy	0	0	0	0	0	2	2
Misc.	1	0	0	0	1	3	4
Total Jan.	20	430	18	1	26	56	82
Total Dec.	152	36,912	20	3	44	155	199
Difference	182	50,310	42	4	50	165	215
	30	398	12	1	6	10	16

WEST CENTRAL AND NORTH CENTRAL TEXAS
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Archer	54	4,009	25	0	15	22	37
Baylor	10	865	8	0	2	4	6
Brown	2	10	1	0	1	4	5
Callahan	2	0	2	0	2	18	20
Clay	1	4	0	0	2	1	3
Coleman	1	0	0	0	0	7	7
Comanche	1	0	1	0	0	5	5
Collin	0	0	0	0	0	2	2
Cooke	21	840	7	0	6	27	33
Denton	1	0	1	0	1	4	5
Eastland	3	83	1	0	2	10	12
Erath	0	0	0	0	0	2	2
Foard	0	0	0	0	1	1	2
Grayson	0	0	0	0	0	2	2
Haskell	0	0	0	0	0	3	3
Hamilton	0	0	0	0	1	2	3
Jack	8	830	3	1	3	13	16
McCulloch	0	0	0	0	0	3	3
Mills	0	0	0	0	0	1	1
Montague	8	253	3	0	2	8	10
Parker	0	0	0	0	0	1	1
Shackelford	17	634	7	1	10	19	29
Stephens	2	39	0	0	0	4	4
Tarrant	0	0	0	0	0	1	1
Throckmorton	4	35	1	0	1	3	4
Wichita	12	687	3	0	2	19	21
Wilbarger	4	471	1	0	4	14	18
Wise	0	0	0	0	0	3	3
Young	44	1,810	25	0	21	27	48
Total Jan.	195	10,570	89	2	76	230	306
Total Dec.	169	12,248	88	1	54	203	257
Difference	26	1,678	1	1	22	27	49

PANHANDLE
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Carson	5	2,485	0	0	4	5	9
Collingsworth	0	0	0	0	0	1	1
Cottle	0	0	0	0	0	1	1
Gray	23	8,168	1	2	7	45	52
Hall	0	0	0	0	0	3	3
Hartley	0	0	0	0	0	1	1
Hutchinson	13	4,522	0	1	10	34	44
Moore	8	0	1	7	6	18	24
Ochiltree	0	0	0	0	1	0	1
Potter	0	0	0	0	0	1	1
Roberts	0	0	0	0	0	2	2
Wheeler	16	9,576	0	6	10	24	34
Total Jan.	65	24,751	2	16	38	134	172
Total Dec.	53	27,122	4	10	30	136	166
Difference	12	3,629	2	6	8	2	6

NORTH LOUISIANA
Summary of Field Operations

Parish—	Comp.	Prod.	Dry	*Gas	Rgs.	Dlg.	Ttl
Bienville	0	0	0	0	1	3	4
Bossier	1	0	0	1	0	5	5
Caddo	28	38,250	3	0	19	47	66
Caldwell	2	0	2	0	0	2	2
Claiborne	0	0	0	0	0	3	3
Concordia	0	0	0	0	0	1	1
DeSoto	1	0	1	0	0	5	5
Grant	0	0	0	0	0	1	1
Jackson	0	0	0	0	1	0	1
LaSalle	1	15	0	0	1	2	3
Lincoln	0	0	0	0	1	1	2
Morehouse	0	0	0	0	1	0	1
Natchitoches	0	0	0	0	0	2	2
Ouachita	2	0	1	1	1	0	1
Red River	0	0	0	0	0	1	1
Richland	0	0	0	0	0	2	2
Sabine	5	135	3	0	0	6	6
Tensas	0	0	0	0	1	0	1
Union	2	0	0	2	0	1	1
Vernon	0	0	0	0	0	1	1

Webster ...	1	0	1	0	0	2	2
Winn	0	0	0	0	0	1	1
Total Jan.	43	38,400	10	4	26	86	112
Total Dec.	43	56,725	7	8	26	86	112
Difference	0	18,325	3	4	0	0	0

*Gas production: Bossier, 12,300,000 ft.; Ouachita, 1,000,000 ft.; Union, 12,000,000 ft.; total, 25,000,000 ft.

Note—The Caddo production is not the potential, but is the actual flow through one-half choke on tubing.

ARKANSAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	*Gas	Rgs.	Dig.	Ttl.
Arkansas ..	1	0	1	0	1	0	1
Clarke	0	0	0	0	0	1	1
Columbia ..	1	0	1	0	0	1	1
Grant	1	0	1	0	0	0	0
Hempstead .	0	0	0	0	2	2	4
Lafayette ..	1	0	1	0	0	5	5
Miller	2	50	1	0	9	3	12
Monroe	0	0	0	0	0	1	1
Nevada	1	0	1	0	0	0	0
Ouachita ..	1	0	1	0	0	5	5
Poinsett ...	1	0	1	0	0	0	0
Pulaski	0	0	0	0	0	1	1
Sevier	0	0	0	0	0	1	1
Union	3	1,100	2	0	2	9	11
Total Jan.	12	1,160	10	0	14	29	43
Total Dec.	5	1,850	4	0	12	30	42
Difference	7	690	6	0	2	1	1

EAST TEXAS (Border Counties)

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Cass	0	0	0	0	3	2	5
Harrison ..	0	0	0	0	2	2	4
Marion	0	0	0	0	1	2	3
Panola	0	0	0	0	2	4	6
Shelby	0	0	0	0	1	3	4
Total Jan.	0	0	0	0	9	13	22
Total Dec.	4	1,200	2	1	11	13	24
Difference	4	1,200	2	1	2	0	2

ROCKY MOUNTAIN AREA

New Mexico

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Bernalillo..	0	0	0	0	0	2	2
McKinley ..	0	0	0	0	0	5	5
Rio Arriba.	0	0	0	0	1	0	1
Santa Fe ..	0	0	0	0	0	2	2
San Juan ..	2	142	0	1	1	10	11
Torrance ..	0	0	0	0	0	2	2
Valencia ...	0	0	0	0	1	3	4
Lea	27	31,302	0	2	9	58	67
Eddy	2	50	0	0	0	9	9
Quay	1	0	1	0	0	0	0
Union	0	0	0	0	0	1	1
San Miguel.	0	0	0	0	0	3	3
Guadalupe ..	0	0	0	0	0	1	1
Chaves	0	0	0	0	0	1	1
Total Jan.	33	31,494	1	3	12	97	109
Total Dec.	28	53,247	6	1	13	105	118
Difference	5	21,853	5	2	1	8	9

Colorado

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Adams	0	0	0	0	0	2	2
Archuleta ..	0	0	0	0	2	3	5
Elbert	1	0	1	0	0	0	0
Huerfano ...	0	0	0	0	0	3	3
Jackson ...	1	35	0	0	0	1	1
Larimer ...	0	0	0	0	0	3	3
Moffat	0	0	0	0	1	1	2
Montezuma..	1	0	1	0	0	1	1
Park	0	0	0	0	0	1	1
Misc.	0	0	0	0	1	13	14
Total Jan.	3	35	2	0	4	28	32
Total Dec.	0	0	0	0	5	32	37
Difference	3	35	2	0	1	4	5

Wyoming

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Albany	1	940	0	0	0	2	2
Big Horn ..	0	0	0	0	1	13	14
Carbon	2	2,183	0	0	0	7	7
Converse ...	1	25	0	0	0	4	4
Fremont ...	1	250	0	0	0	2	2
Lincoln ...	0	0	0	0	0	2	2
Hot Springs	1	774	0	0	0	2	2
Niobrara ...	1	3,120	0	0	2	6	8
Park	0	0	0	0	1	2	3
Sweetwater.	0	0	0	0	0	2	2
Sublet	0	0	0	0	0	3	3
Uinta	1	0	1	0	0	2	2
Washakie ..	0	0	0	0	0	3	3
Weston	0	0	0	0	1	5	6
Misc.	0	0	0	0	1	2	3
Total Jan.	8	7,292	1	0	6	57	63
Total Dec.	10	4,099	3	1	9	59	68
Difference	2	3,193	2	1	3	2	5

Montana

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Big Horn ..	1	0	0	1	0	2	2
Carbon	0	0	0	0	0	2	2
Fergus	0	0	0	0	0	6	6
Glacier	9	2,244	0	1	6	16	22
Pondera	1	0	1	0	1	1	2
Toole	1	20	0	0	3	16	19
Misc.	0	0	0	0	0	12	13
Total Jan.	12	2,264	1	2	10	56	66
Total Dec.	10	424	2	2	12	53	65
Difference	2	1,840	1	0	2	3	1

Utah

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Washington.	1	0	1	0	0	7	7
Misc.	0	0	0	0	1	4	5
Total Jan.	1	0	1	0	1	11	12
Total Dec.	0	0	0	0	1	9	10
Difference	1	0	1	0	0	2	2

EASTERN FIELDS

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs	Dig.	Ttl
Bradford .	*108	122	0	0	7	63	70
Allegany .	†7	6	0	0	1	0	1
Venango-Clarion .	†10	9	1	0	1	17	18
Butler-Armstrong	3	4	0	1	4	5	9
S.W. Pa. ..	6	76	1	3	4	24	28
S.E. Ohio ..	26	228	8	2	13	51	64
W. Va.	42	103	7	23	24	108	132
Total Jan.	202	548	17	31	54	268	322
Total Dec.	248	770	31	53	57	270	327
Difference	46	122	14	22	3	2	5

*Includes 18 pressure wells. †Includes 1 pressure well.

MICHIGAN

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Midland	10	2,450	0	0	12	19	31
Clinton	1	0	1	0	0	0	0
Gratiot	3	0	1	2	0	0	0
Iona	1	0	1	0	1	1	2
Jackson ...	1	0	1	0	0	0	0
Allegan ...	1	0	1	0	0	0	0
Mecosta ...	3	0	0	3	8	12	20
Montcalm ..	9	2,050	4	1	17	16	33
Ogemaw ...	5	1,335	2	0	15	11	26
Wayne	1	0	1	0	0	0	0
Rosscommon	0	0	0	0	0	1	1
Isabella ...	0	0	0	0	13	27	40
Gladwin ...	1	100	0	0	0	0	0
Arenac	1	0	1	0	0	0	0
Tuscola ...	2	5	1	0	0	0	0
Newyago ..	0	0	0	0	2	0	2
Monroe	0	0	0	0	0	1	1
Saginaw ...	1	0	1	0	0	3	3
Chippewa ..	0	0	0	0	1	0	1
Clare	0	0	0	0	0	3	3
Clinton	1	0	1	0	1	0	1
Total Jan.	41	5,940	16	6	70	94	164
Total Dec.	34	5,740	12	4	79	113	192
Difference	7	200	4	2	9	19	28

ILLINOIS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Clark	0	0	0	0	0	6	6
Jasper	0	0	0	0	0	2	2
Total Jan.	0	0	0	0	0	8	8
Total Dec.	0	0	0	0	0	8	8
Difference	0	0	0	0	0	0	0

INDIANA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Daviess	2	0	2	0	0	4	4
Decatur	1	0	0	1	0	0	0
Gibson	2	0	2	0	0	2	2
Johnson	0	0	0	0	0	1	1
Hancock ...	0	0	0	0	0	1	1
Knox	4	15	0	2	0	7	7
Sullivan ...	0	0	0	0	0	1	1
Perry	4	3	2	1	0	4	4
Pike	1	0	0	1	0	5	5
Spencer ...	3	0	3	0	0	1	1
Vanderburg.	1	35	0	0	0	2	2
Cass	0	0	0	0	0	1	1
DeKalb ...	0	0	0	0	0	1	1
Jay	0	0	0	0	0	3	3
Lawrence ..	0	0	0	0	0	2	2
Martin	0	0	0	0	0	4	4
DuBois	0	0	0	0	0	3	3
Dearborn ..	0	0	0	0	0	1	1
Harrison ..	0	0	0	0	0	1	1
Posey	0	0	0	0	0	1	1
Madison ...	0	0	0	0	0	1	1
Marion	0	0	0	0	0	1	1
Vigo	0	0	0	0	0	1	1
Total Jan.	19	53	9	6	0	50	50
Total Dec.	18	15	10	7	0	69	69
Difference	1	38	1	1	0	19	19

CENTRAL OHIO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Ashland ...	2	0	0	2	1	3	4
Wayne	1	0	0	1	2	3	5
Lorain	1	0	0	1	4	3	7
Cuyahoga ..	2	55	0	1	1	0	1
Holmes	3	0	1	2	1	7	8
Richland ..	0	0	0	0	0	2	2
Tuscarawas.	3	0	1	2	0	2	2
Summitt ..	2	1	1	0	3	3	6
Coshocton .	1	30	0	0	1	4	5
Huron	0	0	0	0	0	1	1
Stark	4	0	1	2	7	15	25
Gallia	0	0	0	0	0	4	4
Scioto	0	0	0	0	0	1	1
Pike	0	0	0	0	0	4	4
Lawrence ..	0	0	0	0	1	3	4
Delaware ..	0	0	0	0	0	1	1
Fairfield ..	1	0	0	1	0	5	5
Perry	0	0	0	0	6	5	11
Total Jan.	20	86	4	13	27	69	96
Total Dec.	21	38	6	11	20	75	95
Difference	1	48	2	2	7	6	1

LIMA FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Wood	0	0	0	0	0	3	3
Henry	0	0	0	0	0	2	2
Hancock ..	0	0	0	0	0	1	1
Allen	0	0	0	0	1	3	4
Auglaize ...	0	0	0	0	0	3	3
Mercer	0	0	0	0	0	1	1
Putnam ...	1	10	0	0	0	1	1
Hardin	1	5	0	0	0	2	2
Darke	0	0	0	0	0	3	3
Ottawa	0	0	0	0	0	1	1
Seneca	5	1	2	2	0	2	2
Sandusky ..	0	0	0	0	0	4	4
Wyandot ..	1	0	0	1	1	5	6
Total Jan.	8	16	2	3	2	31	33
Total Dec.	5	17	1	1	1	31	32
Difference	3	1	1	2	1	0	1

KENTUCKY

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Ohio	7	32	5	0	0	3	3
McLean	9	242	3	0	3	4	7
Hancock	2	0	0	2	0	1	1
Warren	1	400	0	0	0	2	2
Henderson .	1	10	0	0	0	1	1
Total Jan.	20	684	8	2	3	11	14
Total Dec.	22	484	9	0	0	12	12
Difference	2	200	1	2	3	1	2

Rocky Mountain Fields

(Continued from Page 78)

Carbon County

Bailey Round Butte Oil Co. No. 1, NW NE SE sec. 3-6s-23e. T.D. 1,551 ft.; chg. over to rot.

Fallon County

Montana-Dakota Utilities Co. No. 1, NE NW sec. 17-3n-62e. Coring at 6,862 ft. in anhydrite and lime.

Fergus County

Minnesota Co. No. 1 Fenholt, SE NW SW sec. 24-21n-18e. Drlg. 1,085 ft.

Judith Operating Co. No. 2 Government, NW NE sec. 35-22n-17e. Cmtd. 15½-in. at 326 ft. in top of Eagle.

H. C. Rowland No. 3 Government, CEL NE SW sec. 18-17n-24e. Spudding 50 ft. (first report).

Kalispel-Kevin Oil Co. No. 2 Emmons, C SW SE sec. 20-21-18e. Drlg. 576 ft.

Glacier County

Two completions, one on the east side and the other on the west side of the Cut Bank field, attracted attention this week. The Montana Power Gas Co. No. 1 Eisler, CWL NE SE section 5-33-5w, due east from the town of Cut Bank and the farthest east of any well drilled in that section, was plugged and abandoned at 2,795 feet. It had no Sunburst sand, topped the Cut Bank at 2,705 feet and entered the Ellis at 2,792 feet. It had only a show in the Cut Bank. The elevation is 3,788 feet. It is half a mile southeast of the same company's No. 1 Simero, which had an initial production of 102 bbls. Same company's No. 1 Coburn, half a mile to the southwest, was dry and abandoned last fall.

Anderson et al No. 2 Anderson, NE SW NW sec. 26-35n-6w. Drlg. 1,550 ft.

A. B. Cobb No. 5 Walberger, C NE NE sec. 35-36n-6w. Rig.

Cobb-Pardee No. 2 Morrison, CWL NW SW sec. 24-33n-6w. R.O.G. (first report).

Cobb-Pardee No. 1 Stufft, C SE NW sec. 25-36n-6w. T. D. 2,160 ft.; running 8¼-in. at 2,470 ft. for W.S.O.

A. E. Crumley No. 1 Tribal, C SW SE sec. 31-33n-5w. Drlg. 2,045 ft.

Dakota-Montana Oil Co. No. Winkler, SW NE NW sec. 36-35n-6w. Drlg. 410 ft.

Gardner et al No. 1 Cole, C NE SW sec. 2-32n-6w. Drlg. 2,200 ft.

Goodman Oil Co. No. 1 Tribal, SW NW SW sec. 25-33n-6w. Drlg. 350 ft.

B. V. Hole No. 1 Tribal, C NW SW sec. 33n-6w. Cellar (first report).

L. P. Jackson et al No. 1 Tribal, NW SE NW sec. 23-34n-7w. Spd. to 110 ft. and S.D.

R. C. Jeffries No. 4-A Lukens, NE NE NE sec. 12-33n-6w. R.U. (first report).

R. C. Jeffries No. 4 Lukens, NE NE NE sec. 12-33n-6w. Abd. junked hole at 2,610 ft.; skidded rig.

J. W. Johnson No. 1 Tribal, CNL NE SW sec. 21-33n-5w. Loc. (first report).

Montana Headlight Oil Co. No. 3 Gritton, NE NE SE sec. 11-34n-6w. Cmtd. 10-in. at 495 ft., 60 sacks.

Montana Power Gas Co. No. 2 Van Ormer, C SE SE sec. 8-33n-5w. R.O.G. (first report).

Montana Power Gas Co. No. 1 Warfield unit, CWL SW sec. 9-33n-5w. R.U. (first report).

Nadeau Bros. No. 1 Tribal, C Lot 4, sec. 4-32n-5w. T.D. 3,016 ft.; 1,000 ft. of oil.

Nadeau Bros. No. 2 Farmers State Bank, C SW NE sec. 17-33n-5w. R.O.G. (first report).

P. Oil Co. No. 6 Haines, NE SW NE sec. 3-34-6w. Drlg. 2,160 ft.

Santa Rita O. & G. Co. No. 7 Tribal, 1,980 ft. S of N line, 1,320 ft. W of E line, sec. 16-35n-6w. T.D. 2,949 ft.; running 7-in. to 2,941 ft.; cored sat. in Cut Bank.

Santa Rita O. & G. Co. No. 1 Shearon, 660 ft. S of N line and 349 ft. W of E line, sec. 34-36n-6w. T.D. 2,092 ft.; drlg. by pipe.

Santa Rita O. & G. Co. No. 1 Corey, NE NW SE sec. 5-32n-5w. T.D. 2,980 ft.; 450 ft. of oil.

Santa Rita O. & G. Co. No. 1 Barrington, SE SW NW sec. 24-33n-6w. S.D. 1,000 ft. for repairs.

Neil Spencer No. 2 Tweedy, 925 ft. NS line, 1,980 ft. WE line, sec. 25-33n-6w. Stdg. rigged.

R. C. Tarrant No. 6 Britton, C SE SW sec. 12-34n-6w. S.D.; rig.

R. C. Tarrant No. 2 State, C NE SE sec. 36-35n-6w. Drlg. 2,485 ft.

R. C. Tarrant No. 7 Haglund, Jr., C SW SW sec. 13-34n-6w. Drlg. 2,825 ft.

R. C. Tarrant No. 2 Reikhoff, SE NE SE sec. 3-34n-6w. Drlg. 350 ft.

Texas Co. No. 2-B Tribal, SE NW NW sec. 6-32n-5w. Loc. (first report).

Texas Co. No. 1 Marie Jones, C NW SW sec. 6-32n-5w. Drlg. 2,325 ft.

Texas Co. No. 1 Walker, C NE NE sec. 2-35n-6w. T.D. 2,945 ft.; 7-in. cmtd.

Texas Co. No. 1-B Tribal, Lot 4, 1,300 ft. from W line, 200 ft. from S line, sec. 32-33n-5w. T.D. 2,745 ft.; 7-in. cmtd.

Texas Co. No. 1-A Tribal, C SW NE sec. 36-33n-6w. Drlg. 505 ft.

Whetstone et al No. 1 Tribal, C SE NW sec. 36-33n-6w. Drlg. 1,550 ft.

Wilkinson et al No. 1 Tribal, Tr. 127, C NE NE sec. 1-32n-6w. Cellar (first report).

Wilkinson et al No. 1 Tribal, Tr. 15, C NE NW sec. 7-32n-5w. Loc. (first report).

Petroleum County

West Dome Oil Co. No. 1, SW SE NE sec. 9-15n-29e. Drlg. 1,293 ft.; first Cat Creek at 1,240-58 ft.; (est. 5 bbls.); cased off with 5 3/16-in. at 1,290 ft.

Judith Basin County

Fletcher E. Hunt No. 3, NW SE NE sec. 30-14n-15w. Drlg. 431 ft.

Pondera County

Wm. M. Fulton No. 1 Price, SW NE NE sec. 18-27-4w. T.D. 1,710 ft. (cor.); drlg. by tools.

Norden Corp., Ltd., No. 1 Hollan, NW SW NW sec. 12-28-6w. Resuming at 583 ft.

Warren Hastings No. 2 Erickson, NW SW NW sec. 10-27n-4w. R.U.

Texas Co. No. 1 Valier Unit No. 1, C NW SE sec. 32-31n-5w. R.U.

Gordon Campbell No. 1 Hughes, NW NE NW sec. 12-30n-4w. R.U.

Jones-Chambers No. 1 Erickson, SW SE SW sec. 3-27n-4w. Loc.

Toole County

A. E. Crumley No. 3 Shaw, SE NW SE sec. 35-36n-2w. Drlg. 1,310 ft.

Agen & Goedderts No. 1, C SE NE sec. 16-35n-3w. Loc.

Big West Oil Co. No. 1 Dalquist, SW NE NW sec. 21-35n-3w. Loc.

Carscallen & Mitchener No. 1 Krueger, 1,320 ft. W of E line, 1,980 ft. S of N line, sec. 10-34n-2w. T.D. 1,650 ft.; prep. to acidize.

Coolidge & Coolidge No. 1 State, NW NW NW sec. 36-36n-2w. Spdg.

Continental Oil Co. No. 7 State, SE NE NE sec. 16-35n-2w. Loc.

Continental Oil Co. No. 8 State, NE SE NE sec. 16-35n-2w. Loc.

Continental Oil Co. No. 9 State, SE SW NE sec. 16-35n-2w. Loc.

Fraser & Smith No. 1 Crabtree, NE NE SE sec. 14-34n-2w. Spdg. 100 ft.

Monopeg Oils, Ltd., No. 3 Dippie, CSL SW NW sec. 28-35n-1w. T.D. 1,450 ft.; R.U. to drill in.

Burt Smith No. 1 Engel, SE SE NE sec. 2-35n-3w. R.U.

Welch Bros. No. 1 Dewald, SW NE NE sec. 26-35n-2w. Spdg.

UTAH

Grand County

Columbia Crude Co. No. 1 Rath, SW SE sec. 12-35n-20e. Rng. 15½-in. to bottom at 148 ft.

Utah Southern Oil Co. No. 1 Hyde, SE NW NW sec. 33-22e. Drlg. 4,140 ft. in Permian.

Glenn Ruby et al No. 1 State, NE SE SE sec. 34-21s-16e. Drlg. 1,000 ft. in Windgate sd.

Utah County

Diamond Oil Co. No. 4 Govt., CSL SE NW sec. 16-8s-5e. S.D. 3,951 ft.; rebldg. road after landslide.

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Shell Oil Co., No. 11 Capitan, Santa Barbara Co. ...	32- 5-30	2,922	P.B. 2,789
Shell Oil Co., No. 13 Capitan, Santa Barbara Co. ...	32- 5-30	2,600	sd. sh. drlg.
Honolulu Oil Corp., No. 9 Elwood, Santa Barbara Co.	tideland	6,998	sd. sh. drlg.
Barnsdall-Rio Grande, No. 9-B Elwood, Santa Barbara	tideland	3,725	completing
Barnsdall-Rio Grande, No. 12 Elwood, Santa Barbara	15- 4-29	3,506	fish. D.P.
Pacific Western Oil Co., No. 4 Elwood, Santa Barbara	tideland	3,688	blew out
Signal Oil Co., No. 7 Elwood, Santa Barbara Co.	tideland	3,757	completing
Spalding, Caroline, No. 12 Elwood, Santa Barbara Co.	tideland	....	foundation
York Oil Co., No. 3 Lompoc, Santa Barbara Co.	33- 8-34	....	bldg. rig
Union Oil Co., No. 16 Orcutt, Santa Barbara Co. ...	26- 9-34	2,380	sd. sh. drlg.
Union Oil Co., No. 8 Santa Maria, Santa Barbara Co.	23-10-34	....	bldg. rig
Santa Barbara Oil, No. 1 Carpinteria, Santa Barbara	29- 4-25	2,290	P.B. 1,950
Cornero, Tony, No. 1 Carpinteria, Santa Barbara Co.	8- 4-25	492	sd. sh. drlg.
Bankline Oil Co., No. 1 Coal Oil Pt., Santa Barbara	tideland	5,510	cleaning out
Union Oil Co., No. 1 Sudden, Santa Barbara Co.	10- 5-25	2,280	sd. sh. drlg.
Anacapa Oil Co., No. 4 Mesa, Santa Barbara Co. ...	28- 4-27	....	rigging up
Calco Pet. Co., No. 1 Las Posas, Ventura Co.	17- 3-20	3,083	O.S. drlg.
Union Oil Co., No. 10 Bardsdale, Ventura Co.	12- 3-20	6,055	swabbing
Bankline Oil Co., No. 1 Seeps, Ventura Co.	36- 5-20	2,554	rd. sh. drlg.
Ivers, H. A., No. 12 Seeps, Ventura Co.	1- 4-20	1,770	hd. sd. drlg.
Wasibi Oil Co., No. 1 Seeps, Ventura Co.	33- 5-19	....	rigging up
Laing & Jacobs, No. 1 Shiells Canyon, Ventura Co. ..	32- 4-19	1,275	sidetracking
El Rancho Oil Co., No. 1 Shiells Canyon, Ventura Co.	9- 3-19	4,041	cleaning out
Bestco Pet. Co., No. 1 Shiells Canyon, Ventura Co. ..	2- 3-19	695	rd. sh. drlg.
Bankline Oil Co., No. 1 Shiells Canyon, Ventura Co. ..	3- 3-19	4,074	redrlg. 3,871
Petroleum Securities, No. 1 Shiells Canyon, Ventura Co.	3- 3-19	631	hd. sh. drlg.
The Texas Co., No. 129 Shiells Canyon, Ventura Co. ..	4- 3-19	4,698	sd. sh. drlg.
Hull, James, No. 1 Santa Susana, Ventura Co.	2- 2-18	1,700	hd. sd. drlg.
Bolsa Chica Oil Co., No. 3 Temescal, Ventura Co. ...	4- 4-18	1,201	br. sh. drlg.
Johnson, R. P., No. 1 Temescal, Ventura Co.	21- 4-18	1,397	sd. sh. drlg.
General Pet. Corp., No. 2 Oxnard, Ventura Co.	26- 2-23	5,362	sd. sh. drlg.
Rincon Oil Co., No. 3 Rincon, Ventura Co.	tideland	952	redrlg. 351
Continental Oil Co., No. 5 San Miguelito, Ventura Co.	24- 3-24	1,731	sd. sh. drlg.
C. C. M. Oil Co., No. 1 Javon, Ventura Co.	15- 3-24	....	bldg. rig
Standard Oil Co., No. 1 Lost Hills, Kern Co.	2-26-20	6,314	redrlg. 6,050
Richfield Oil Co., No. 2 Devil's Den, Kern Co.	14-25-18	2,501	cleaning out
Belmac Drlg. Co., No. 1 McKittrick, Kern Co.	22-29-21	4,797	fish. D.P.
Calcrude Pet. Co., No. 1 McKittrick, Kern Co.	34-30-22	....	rigging up
Franco-Western Oil Co., No. 12 McKittrick, Kern Co.	9-30-22	2,300	cleaning out
Bergman Oil Co., No. 1 McKittrick, Kern Co.	32-29-22	....	rigged up
Milburn, J. H., No. 1 McKittrick, Kern Co.	35-29-21	1,032	sd. sh. drlg.
Welport Oil Co., No. 14 McKittrick, Kern Co.	26-29-21	....	rigging up
Standard Oil Co., No. 4 North Belridge, Kern Co. ...	36-27-20	5,898	br. sh. drlg.
Associated Oil Co., No. 5 North Belridge, Kern Co. ..	34-27-20	5,751	will deepen
Belridge Oil Co., No. 18-35 North Belridge, Kern Co.	35-27-20	5,383	cmtd. 5,351
Belridge Oil Co., No. 6-1 North Belridge, Kern Co...	1-28-23	7,970	cmtd. 7,907
Belridge Oil Co., No. 17-35 North Belridge, Kern Co.	35-27-20	5,583	gr. sd. drlg.
Union Oil Co., No. 20 North Belridge, Kern Co.	36-27-20	9,492	P.B. 9,340
Union Oil Co., No. 21 North Belridge, Kern Co.	36-27-20	4,571	sd. sh. drlg.
Continental Oil Co., No. 7 North Belridge, Kern Co.	36-27-20	7,000	sd. sh. drlg.
Alford, J. W., No. 1 Delano, Kern Co.	14-25-27	2,440	cleaning out
C. C. M. Oil Co., No. 16 Kern Front, Kern Co.	23-28-27	2,184	cmtd. 1,906
Republic Pet. Co., No. 8 Kern Front, Kern Co.	11-28-27	1,961	bailing
Republic Pet. Co., No. 9 Kern Front, Kern Co.	24-28-27	2,100	pump. 312 b.d.
L. & H. Prop., Inc., No. 1 Kern Front, Kern Co.	13-28-27	....	bldg. rig
General Pet. Corp., No. 5 Kern Front, Kern Co.	14-28-27	2,157	P.B. 2,130
Kern River Oilfields, No. 7 Kern Front, Kern Co. ...	25-28-27	1,845	cmtd.
Associated Oil Co., No. 6 Kern Front, Kern Co.	4-28-27	2,840	P.B. 2,747
Standard Oil Co., No. 12 Kern Front, Kern Co.	9-28-27	2,155	sd. sh. drlg.
Standard Oil Co., No. 13 Kern Front, Kern Co.	24-28-27	2,014	cmtd. 1,712
The Texas Co., No. 15 Kern Front, Kern Co.	23-28-27	2,385	sd. sh. drlg.
Union Oil Co., No. 8 Kern Front, Kern Co.	11-28-27	....	rigging up
Ausbrit Oil Co., No. 1 Premier, Kern Co.	20-27-27	2,139	cleaning out
Unger, M., No. 1 Dominion, Kern Co.	27-26-28	991	sd. sh. drlg.
Santa Clara Oil Co., No. 1 Mount Poso, Kern Co. ...	7-26-28	1,850	gr. sd. drlg.
McMahan, Hugh, No. 1 Mount Poso, Kern Co.	27-26-28	1,581	fish. D.P.
Vanguard Oil Co., No. 4 Mount Poso, Kern Co.	22-27-28	1,703	redrlg. 1,450
Poso Pet. Co., No. 1 Mount Poso, Kern Co.	2-27-27	1,425	gr. sd. drlg.
Union Oil Co., No. 1 Poso Outpost, Kern Co.	24-27-28	866	sd. sh. drlg.
Dixie Lee Oil Co., No. 2 Fruitvale, Kern Co.	23-29-27	....	rigging up
Moschbach Oil Co., No. 1 Fruitvale, Kern Co.	21-29-27	....	rigging up
Mayo, Luther, No. 1 Fruitvale, Kern Co.	21-29-27	4,098	looks wet
Magnet Oil Co., No. 1 Fruitvale, Kern Co.	21-29-27	3,841	sd. sh. drlg.
H. L. J. Oil Co., No. 1 Fruitvale, Kern Co.	23-29-27	....	rigging up
Western Gulf Oil Co., No. 22 Fruitvale, Kern Co. ...	22-29-27	3,350	O.S. drlg.
Western Gulf Oil Co., No. 23 Fruitvale, Kern Co. ...	27-29-27	3,445	recmtd. 3,400
Mohawk Oil Co., No. 10 Fruitvale, Kern Co.	23-29-27	3,601	gr. sd. drlg.
Hogan Pet. Co., No. 11 Mountain View, Kern Co. ...	32-30-29	5,951	flow. 2,470 b.d.
Hogan Pet. Co., No. 12 Mountain View, Kern Co. ...	32-30-29	4,990	sd. sh. drlg.
Hogan Pet. Co., No. 13 Mountain View, Kern Co. ...	32-30-29	3,281	sd. sh. drlg.
Hogan Pet. Co., No. 14 Mountain View, Kern Co. ...	32-30-29	....	bldg. rig
Buffalo Oil Co., No. 3 Mountain View, Kern Co.	19-30-29	761	sd. sh. drlg.
Mohawk Oil Co., No. 16 Mountain View, Kern Co. ...	30-30-29	6,055	sd. sh. drlg.
Mohawk Oil Co., No. 18 Mountain View, Kern Co. ...	30-30-29	5,597	sd. sh. drlg.
Mohawk Oil Co., No. 19 Mountain View, Kern Co. ...	30-30-29	....	rigging up
Ohio Oil Co., No. 3 Mountain View, Kern Co.	33-30-29	5,731	sd. sh. drlg.
Allied Pet. Corp., No. 1 Mountain View, Kern Co. ...	19-30-29	5,165	reaming
Hancock Oil Co., No. 10 Mountain View, Kern Co. ...	14-30-28	....	grading
Treasure Oil Co., No. 1 Mountain View, Kern Co. ...	12-30-28	1,761	sd. sh. drlg.
Jergins Trust, No. 8 Mountain View, Kern Co.	19-30-29	....	bldg. rig
Shell Oil Co., No. 8 Mountain View, Kern Co.	32-30-29	5,818	sd. sh. drlg.
Shell Oil Co., No. 9 Mountain View, Kern Co.	32-30-29	5,815	C.P. 4,986
Shell Oil Co., No. 10 Mountain View, Kern Co.	32-30-29	5,940	sd. sh. drlg.
Shell Oil Co., No. 11 Mountain View, Kern Co.	32-30-29	....	rigged up
Standard Oil Co., No. 24 Mountain View, Kern Co. ...	13-30-28	5,285	P.B. 5,188
Standard Oil Co., No. 26 Mountain View, Kern Co. ...	13-30-28	1,855	sd. sh. drlg.
Mountain View Oil Co., No. 1 Mountain View, Kern Co.	25-30-28	5,814	cleaning out
Mohawk Pet. Co., No. 1 Arvin, Kern Co.	10-31-29	....	bldg. rig
Ohio Oil Co., No. 1 Rio Bravo, Kern Co.	1-30-25	4,998	sd. sh. drlg.
Shell Oil Co., No. 1 Stevens, Kern Co.	29-30-26	7,796	sd. sh. drlg.
Helm & Pruitt, No. 1 Round Mountain, Kern Co. ...	17-28-29	2,175	redrlg. 921
Shell Oil Co., No. 4 Round Mountain, Kern Co.	7-28-29	....	rigging up
Shell Oil Co., No. 5 Round Mountain, Kern Co.	7-28-29	....	bldg. rig
Honolulu Oil Corp., No. 15 Round Mountain, Kern Co.	18-28-29	1,832	test. W.S.O.
Honolulu Oil Corp., No. 17 Round Mountain, Kern Co.	18-28-29	....	rigging up
M. & L. Oil Co., No. 1 Edison, Kern Co.	23-30-29	2,048	cmtd. 1,787
Jergins Trust, No. 22 Edison, Kern Co.	22-30-29	3,265	sd. sh. drlg.
Jergins Trust, No. 23 Edison, Kern Co.	23-30-29	3,121	sd. sh. drlg.
Buckeye Union Oil Co., No. 1 Edison, Kern Co.	22-30-29	3,831	hd. sh. drlg.
Corbett, R. E., No. 1 Edison, Kern Co.	25-30-29	2,067	pump. 77 b.d.
Whittier-Santa Fe Oil Co., No. 1 Edison, Kern Co. ..	21-30-29	3,249	cmtd. 2,996
Monterey Expl. Co., No. 5 Edison, Kern Co.	14-30-29	2,699	P.B. 2,306
The Texas Co., No. 1 Edison, Kern Co.	25-30-29	....	rigged up
General Pet., No. 14 Edison, Kern Co.	24-30-29	1,458	recmtd. 1,376
General Pet. Corp., No. 1 Elk Hills, Kern Co.	5-30-24	6,149	P.B. 6,050
American Pacific Oil Co., No. 1 San Emidio, Kern Co.	18-10-23	....	rigging up
Gibson Oil Co., No. 3 Maricopa, Kern Co.	6-11-23	2,392	will redrl.
Gibson Oil Co., No. 4 Maricopa, Kern Co.	6-11-23	1,532	sd. sh. drlg.
Chief Oil Co., No. 2 Maricopa, Kern Co.	6-11-23	2,472	will redrl.
General Pet. Corp., No. 1 Maricopa, Kern Co.	6-11-23	2,724	cmtd. 2,658
Standard Oil Co., No. 24 Midway-Sunset, Kern Co. ...	36-12-24	2,201	cleaning out
Standard Oil Co., No. 25 Midway-Sunset, Kern Co. ...	36-12-24	2,106	cleaning out
Standard Oil Co., No. 65 Midway-Sunset, Kern Co. ...	36-12-24	1,986	br. sh. drlg.
Standard Oil Co., No. 54 Midway-Sunset, Kern Co. ...	32-32-24	2,870	sd. sh. drlg.
Standard Oil Co., No. 4 Midway-Sunset, Kern Co. ...	5-11-23	....	bldg. rig
Standard Oil Co., No. 219 Midway-Sunset, Kern Co. ..	33-32-24	....	bldg. rig
Alford Oil Co., No. 4 Maricopa, Kern Co.	25-12-24	2,833	pump. 150 b.d.
Alford Oil Co., No. 5 Maricopa, Kern Co.	4-32-23	....	bldg. rig
McAdams, Ed., No. 1 Midway-Sunset, Kern Co.	23-32-23	1,004	sd. sh. drlg.
Obispo Oil Co., No. 12 Midway-Sunset, Kern Co. ...	32-12-23	....	rigging up
Jerman, R. W., No. 1 Midway-Sunset, Kern Co.	31-12-23	3,398	br. sh. drlg.
Evans, H. B., No. 12 Midway, Kern Co.	35-32-23	1,390	bailing
Ohio Oil Co., No. 6 Buena Vista Lake, Kern Co. ...	32-31-26	4,381	sd. sh. drlg.
Superior Oil Co., No. 1 Buena Vista Lake, Kern Co.	6-32-25	4,900	dry; abd.
Silver Gate Oil & Gas Co., No. 1 Tejon, Kern Co. ...	7-10-19	3,005	redrlg. 2,960
Reserve Oil Co., No. 1 Tejon, Kern Co.	33-11-19	6,032	P.B. 4,805
Signal Oil Co., No. 1 Comanche, Kern Co.	30-32-30	....	material
Tejon Ridge Oil Co., No. 1 Comanche, Kern Co. ...	23-32-29	2,350	deepening
Seaboard Oil Co., No. 4 Huron, Fresno Co.	10-16-13	3,052	sd. sh. drlg.
Western Gulf, No. 3 Cantua, Fresno Co.	3-17-15	....	rigging up
Conlon, J. M., No. 1 Coalinga, Fresno Co.	30-19-15	881	sd. sh. drlg.
Standard Oil Co., No. 1 South Coalinga, Fresno Co. ..	36-21-14	751	sd. sh. drlg.
Union Oil Co., No. 1 Lillis-Welsh, Fresno Co.	24-21-16	11,127	P.B. 10,739
K. N. D. A., No. 2 Kettleman North, Fresno Co.	20-21-17	6,700	sd. sh. drlg.
K. N. D. A., No. 38 Kettleman North, Fresno Co. ...	18-21-17	....	rigging up
K. N. D. A., No. 74 Kettleman North, Fresno Co. ...	30-21-17	3,920	sd. sh. drlg.
K. N. D. A., No. 34 Kettleman North, Kings Co. ...	36-22-18	9,733	flow. S.W.
Standard Oil Co., No. 25 Kettleman North, Fresno Co.	19-21-17	....	rigging up
Standard Oil Co., No. 56 Kettleman North, Fresno Co.	19-21-17	....	bldg. rig
Standard Oil Co., No. 65 Kettleman North, Fresno Co.	19-21-17	4,881	sd. sh. drlg.
Standard Oil Co., No. 72 Kettleman North, Fresno Co.	19-21-17	4,651	sd. sh. drlg.
Standard Oil Co., No. 2 Kettleman Middle, Kings Co.	29-23-19	8,551	hd. sd. drlg.
Commonwealth Consd. Gas, No. 2 Tulare Lake, Kings	21-22-20	2,495	sd. sh. drlg.
Union-Hancock, No. 1 Tulare Lake, Kings Co.	28-22-20	4,922	sd. sh. drlg.
Pismo Pet. Corp., No. 1 Pismo, San Luis Obispo Co...	5-32-12	2,685	sd. sh. drlg.
Emerich Oil Co., No. 1 Cholame, San Luis Obispo Co.	22-32-22	1,906	swabbing
United Oil Co., No. 1 Cholame, San Luis Obispo Co.	2-32-21	280	sd. sh. drlg.
Barnsdall Oil, No. 1 Carissa Plains, San Luis Obispo	24-28-17	971	sd. sh. drlg.
Amerada Pet., No. 7 Tracy, San Joaquin Co.	15- 2-5	6,160	P.B. 4,700
Standard Oil Co., No. 1 McDonald Island, San Joaquin	25- 2-4	3,961	sd. sh. drlg.
Northern Counties Pet., No. 1 Tehama, Tehama Co.	25-24-3	7,050	cleaning out
Shell Oil Co., No. 1 Branch, Monterey Co.	34-24-10	7,879	sd. sh. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Bldg., building.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
C.P., casing pressure.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
C.L., center line.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging back (or plugged) back.
P.B.P., pulling big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.R.T., rigging up rotary tools.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdtr. or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prerated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.S.C., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.O.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., wait on standard rig.
Wtr., water.

The Texas Co., No. 2 Eureka, Humboldt Co.	22- 3-1	4,357	D.P. stuck
Amerada Pet. Co., No. 1 Emigh, Solano Co.	26- 4-2	....	rigging up

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Republic Pet. Co., No. 2 El Segundo, Los Angeles Co.	18- 3-14	7,481	hd. sd. drlg.
Signal Finance, No. 1 Hawthorne, Los Angeles Co.	10- 3-14	....	bldg. rig
Cone Oil Co., No. 1 Lawndale, Los Angeles Co.	20- 3-14	5,911	sd. sh. drlg.
Shell Oil Co., No. 1 Moneta, Los Angeles Co.	33- 3-14	7,350	sd. sh. drlg.
Big Ben Oil Co., No. 1 Torrance, Los Angeles Co.	31- 3-14	....	bldg. rig
Sioux Oil Co., No. 1 Torrance, Los Angeles Co.	31- 3-14	....	bldg. rig
White Five Oil Co., No. 1 Torrance, Los Angeles Co.	31- 3-14	3,885	fishing
White Five Oil Co., No. 2 Torrance, Los Angeles Co.	31- 3-14	....	bldg. rig
Linderman, G. K., No. 1 Torrance, Los Angeles Co.	31- 3-14	1,296	sd. sh. drlg.
Sterling Oil Co., No. 1 Torrance, Los Angeles Co.	31- 3-14	3,877	cleaning out
Walken Oil Co., No. 1 Torrance, Los Angeles Co.	5- 4-14	....	rigging up
Dumas-Brown Oil Co., No. 1 Torrance, Los Angeles Co.	6- 4-14	....	bldg. rig
Dumas-Lewis Oil Co., No. 2 Torrance, Los Angeles Co.	6- 4-14	....	bldg. rig
B. & N. Oil Co., No. 1 Torrance, Los Angeles Co.	18- 4-14	3,368	cmtd.
Mullins Oil Corp., No. 1 Torrance, Los Angeles Co.	31- 3-14	....	bldg. rig
Redondo Oil Corp., No. 1 Torrance, Los Angeles Co.	31- 3-14	....	rigging up
Redondo Oil Corp., No. 2 Torrance, Los Angeles Co.	31- 3-14	....	bldg. rig
Tu-Jax Oil Co., No. 1 Torrance, Los Angeles Co.	32- 3-14	....	rigging up
Rensek Oil & Gas Co., No. 1 Torrance, Los Angeles Co.	5- 4-14	3,165	cmtd. 3,145
C. C. M. Oil Co., No. 23 Torrance, Los Angeles Co.	8- 4-14	4,762	sd. sh. drlg.
West American Oil Co., No. 1 Dominguez, Los Angeles	3- 4-13	7,953	sd. sh. drlg.
Union Oil Co., No. 8 Domingues Carson, Los Angeles	33- 3-13	4,931	sd. sh. drlg.
Shell Oil Co., No. 1 Long Beach, Los Angeles Co.	18- 4-13	6,174	sd. sh. drlg.
Barnsdall Oil Co., No. 15 Rosecrans, Los Angeles Co.	18- 3-13	4,955	P.B. 3,889
Mars Oil Co., No. 1 Athens, Los Angeles Co.	7- 3-13	4,850	cmtd. 3,900
Continental Oil Co., No. 58 Seal Beach, Los Angeles	3- 5-12	6,538	flow. 960 b.d.
Associated Oil Co., No. 18 Seal Beach, Los Angeles Co	11- 5-12	3,141	sd. sh. drlg.
Standard Oil Co., No. 27 Seal Beach, Los Angeles Co.	3- 5-12	4,765	sd. sh. drlg.
Engler & Long, No. 1 Artesia, Los Angeles Co.	25- 3-12	5,888	P.B. 5,100
Standard Oil Co., No. 17 Inglewood Deep, Los Angeles	8- 2-14	3,340	sd. sh. drlg.
Ohio Oil Co., No. 18 Del Rey, Los Angeles Co.	32- 2-15	6,380	cmtd. 6,295
Eastern Oil Co., No. 1 Del Rey, Los Angeles Co.	32- 2-15	7,360	sd. sh. drlg.
Royalty Service Corp., No. 6 Del Rey, Los Angeles Co.	33- 2-15	6,172	sd. sh. drlg.
Union Oil Co., No. 21 Del Rey, Los Angeles Co.	27- 2-15	5,703	sd. sh. drlg.
Yant Pet. Corp., No. 1 Newhall, Los Angeles Co.	1- 3-16	1,953	hd. sd. drlg.
Yant Pet. Corp., No. 2 Newhall, Los Angeles Co.	36- 4-16	....	rigged up
Eyer Pet. Co., No. 1 Compton, Los Angeles Co.	20- 4-13	3,794	wet; recmtd.
Harbor Pet. Co., No. 1 Wilmington, Los Angeles Co.	28- 4-13	....	bldg. rig
Sovereign Oil Co., No. 1 Wilmington, Los Angeles Co.	28- 4-13	3,663	P.B. 3,535
Codri Oil Co., No. 1 Wilmington, Los Angeles Co.	29- 4-13	2,755	sd. sh. drlg.
General Pet. Corp., No. 1 Wilmington, Los Angeles Co.	4- 5-13	....	drive piles
Standard Oil Co., No. 79 Montebello, Los Angeles Co.	2- 2-13	5,897	sd. sh. drlg.
Standard Oil Co., No. 81 Montebello, Los Angeles Co.	2- 2-13	3,591	hd. sd. drlg.
Standard Oil Co., No. 82 Montebello, Los Angeles Co.	2- 2-13	7,087	hd. sd. drlg.
Standard Oil Co., No. 83 Montebello, Los Angeles Co.	2- 2-13	3,993	sd. sh. drlg.
Standard Oil Co., No. 84 Montebello, Los Angeles Co.	2- 2-13	3,400	P.B. 2,985
Womac, Inc., No. 3 Montebello, Los Angeles Co.	4- 2-11	3,164	P.B. 2,960
Woodward, J. A., No. 1 Montebello, Los Angeles Co.	4- 2-11	3,476	sd. sh. drlg.
The Texas Co., No. 13 Montebello, Los Angeles Co.	5- 2-11	7,312	test. W.S.O.
Universal Consd., No. 6 Montebello, Los Angeles Co.	5- 2-11	4,572	sd. sh. drlg.
Wilshire Oil Co., No. 1 Montebello, Los Angeles Co.	5- 2-11	6,252	redrlg. 5,797
Richfield Oil Co., No. 1 Montebello, Los Angeles Co.	5- 2-11	3,471	sd. sh. drlg.
Richfield Oil Co., No. 2 Montebello, Los Angeles Co.	5- 2-11	2,561	sd. sh. drlg.
North American, No. 2 Montebello, Los Angeles Co.	5- 2-11	4,497	hd. sd. drlg.
St. Helens Pet. Co., No. 7 Montebello, Los Angeles Co.	5- 2-11	1,531	sd. sh. drlg.
Oil & Gas Associates, No. 1 Pico, Los Angeles Co.	9- 2-11	4,281	sd. sh. drlg.
McVicar & Rood, No. 1 Puente, Los Angeles Co.	4- 2-9	....	bldg. rig
Great Coastal Oil Co., No. 1 Elsinore, Riverside Co.	36- 5-5	2,215	hd. sd. drlg.
Stevens, F. E., No. 1 Corona, Riverside Co.	27- 3-7	....	rigged up
Commander Oil Co., No. 1 Newport, Orange Co.	29- 6-10	1,115	cleaning out
Hillman & Long, No. 1 Westminister, Orange Co.	14- 5-11	6,574	sd. sh. drlg.
West American Oil Co., No. 1 East Coyote, Orange Co.	14- 3-10	....	material
Standard Oil Co., No. 1 Anaheim, Orange Co.	36- 3-9	2,714	pump 15 b.d.
Union Oil Co., No. 29 Chapman Richfield, Orange Co.	30- 3-9	2,520	sd. sh. drlg.
Union Oil Co., No. 31 Chapman Richfield, Orange Co.	30- 3-9	....	grading
Union Oil Co., No. 33 Chapman Richfield, Orange Co.	30- 3-9	....	grading
Continental Oil Co., No. 1 Yorba, Orange Co.	21- 3-9	4,796	P.B. 2,492

KANSAS

(Week Ending April 18. Descriptions are East unless marked otherwise)

Barton County

Arch E. Merriam No. 1 Soeken, SW SW SE sec. 27-17-11w. S.D. 2,470 ft.

Buchanan & Alexander No. 1 Langfeld, NE NE SW sec. 14-20-11w. Drlg. 2,915 ft.

John Burton No. 1 Wendel, NE cor. sec. 13-19-11w. Spudded.

Davison et al No. 1 Birzer, SW SE SW sec. 22-17-12w. U.R. at 660 ft.

Illigoes et al No. 1 Schmidt, NE cor. sec. 27-19-11w. T.D. 3,490 ft.; D.&A.

George W. Hinkie No. 1 Smith, SW NW NW sec. 1-17-11w. Set 6-in. csg. 3,250 ft.

Morgan & Flynn et al No. 1 Zimmer, SE SE SW sec. 20-19-14w. Set 6-in. csg. 3,-310 ft.; C.O.

Murphy & Morgan No. 1 Robinson, NE NE SW sec. 21-16-14w. Drlg. 3,000 ft.

G. H. Rose and W. H. Lant No. 1 Redetzke, NE NW NW sec. 1-16-11w. M. LM.

Roy Ramsey et al No. 1 Hunt, NW cor. sec. 10-18-11w. Siliceous 3,389-93 ft.; U.R.

Schermerhorn Oil Co. No. 1 Hunter, NE cor. sec. 29-18-15w. Drlg. 1,650 ft.

Simpson & Noble and Atlantic Oil Producing Co. No. 1 Hiss, C NW NE sec 31-20-13w. K.C. 3,205 ft.; cd. to 3,285 ft.; with 3 ft. of saturation; R.U.S.T.

Torry & Feaster No. 1 Feist, NE NE SE sec. 29-18-11w. Siliceous lime 3,436-32½ ft.; T.D.; potential; pumped 344 bbls. oil in 18½ hrs.

Wakefield & Johnson No. 1 Bumm, SW SW NE sec. 32-19-12w. S.D. 135 ft. Will skid rig.

Butler County

Ellis et al No. 1-A Pettit, SE SE NW sec. 21-28-6. R.U.

Cowley County

Craft et al No. 1 Whitson, NE NE NE sec. 20-33-4. Drlg. 50 ft.

Mead Bros. et al No. 1 Orr, SE SE SW sec. 23-31-4. Drlg. 3,950 ft.

D. D. Mickleson et al No. 1 Wallace, SW SE SE sec. 10-33-4. Spudded.

A. D. Morton et al No. 1 Roger, SE SE NE sec. 1-31-4. Spudded and S.D.

Penwest Oil Co. No. 1 Clover, NE SE SE sec. 8-31-7. 19,000,000 ft. gas 1,430-60 ft.; Siliceous 3,177 ft.; T.D. 3,183 ft.; showing water; P.B. 1,490 ft.

Roth & Faurot No. 1 Guthrie, NW cor. Lot 14, sec. 30-33-8. Drlg. 3,135 ft.

Earl Wakefield No. 1 Wilson, NW cor. sec. 4-32-3. Chat 3,069 ft.; Siliceous 3,-383-3,403 ft.; T.D.; D.&A.

Edwards County

Stanolind O. & G. Co. et al No. 1 Donovan, C SE SE sec. 14-26-18w. R.U.R.

Ellis County

Jones Bros. & Carpenter et al No. 1 Solomon, SE SE SW sec. 28-11-19w. Drlg. 1,321 ft.

Bridgeport Machine Co. et al No. 1 Madden Est., NE NW NW sec. 26-15-18w. Drlg. 530 ft.

Brunson & Ewers-Simpson No. 1 Gross, NE NE SW sec. 29-14-17w. Fsg. 1,130 ft.

Empire O. & R. Co. No. 1 J. C. Dreher, NE cor. sec. 27-15-19w. Cellar.

Harris & Haun et al No. 1 Schmeidler, SE SE SW sec. 3-13-17w. Rigging up.

Larlo Oil & Gas et al No. 1 Walter, SE NE SW sec. 2-12-18w. Anhydrite 1,314 ft.; drlg. 2,005 ft.

Muth et al No. 1 Penney, SW SW SE sec. 29-14-18w. M.I.M.

Tom Palmer No. 1 Schoenthaler, NE NE NW sec. 31-12-19w. R.U.

Twin Drlg. Co. No. 1 Copeland, NE NE SW sec. 26-14-19w. Rig.

Twin Drlg. Co. No. 1 Reidel, SW SW NE sec. 27-13-16w. Drlg. 3,237 ft.

Yarnell & Carlson No. 1 Phillip, NW NW SE sec. 2-14-18w. Spudded.

Ellsworth County

Empire O. & R. Co. et al No. 1 Kroesch, NW NW SE sec. 33-17-9w. Drlg. 2,450 ft.

Skiles et al No. 1 Kafka, NE NE SW sec 15-17-8w. K.C. L. 2,825 ft.; drlg. 3,055 ft.

Finney County

Lone Star State Drlg. Co. No. 1 Hamlin, SW SW NE sec. 31-24-34w. R.U.

Graham County

Vickers Pet. Co. & Phillips Pet. Co. No. 1 Hutton, NE NE SE sec. 29-8-23w. S.D. 1,590 ft.

Greenwood County

Hale & Reese No. 1 Needles, NE SE NW sec. 12-25-10. S.D. 285 ft.

Ward McGinnis No. 1 Dater, NW NW SW sec. 11-24-8. M.I.M.

Ward McGinnis No. 1 Lampe, NW NE SW sec. 26-24-8. Rig.

Harper County

Marathon Oil Co. No. 1 Zellers, C SW NW sec. 17-35-8w. Wilcox sand 5,320 ft.; S.O. and gas, salty taste; T.D. 5,410 ft.; fsg.

Harvey County

Empire O. & R. Co. et al No. 1 Webster, SE SE SW sec. 8-24-2w. Chat, 3,334-38 ft.; T.D. 3,425 ft.; D.&A.

Harburney Oil Co. No. 1 Schreg, NW NW SE sec. 24-22-3w. Fsg. 2,605 ft.

Western Kansas O. & R. Co. No. 1 Warkentin, C SW SW sec. 1-23-2w. Chat, 2,970 ft.; T.D. 3,000 ft.; flowing by hds., est. 200 B.P.D.

Haskell County

Helmerich & Payne et al No. 1 Larson, C SE sec. 28-28-33w. Rig.

Kuhn Brothers et al No. 1 Nilson, SW SW SE sec. 21-28-32w. R.U.R.

Kingman County

D. R. Lauck et al No. 1 Skilling, C E½ E½ SW sec. 33-27-8w. O.W.D.D.; drlg. 4,533 ft.

McPherson County

Empire Oil & Ref. Co. No. 1 Cunningham, SE cor. sec. 26-18-1w. Drlg. 579 ft.

Ness County

Continental Oil Co. No. 1 Holcomb, 1,320 ft. from N and 440 ft. from E lines of NW¼ sec. 26-11-23w. Drlg. 1,367 ft.

Continental Oil Co. No. 1 Thompson, C E½ E½ SW sec. 13-18-26w. Drlg. 2,100 ft.

Reno County

Cheney et al No. 1 Moore, NE cor. sec. 14-26-8w. R.U.R.

Dickey Oil Co. No. 1-A Shepherd, NE NE NW sec. 22-26-9w. Chat 3,370 ft.; set 7-in. csg. 4,125 ft.; S.S.O. 4,139-42 ft.

Foraker et al No. 1 Hiett, SE SW NE sec. 34-24-4w. Drlg. 2,758 ft.

Helmerich & Payne et al No. 1 Schwaiger, SW SE NE sec. 27-26-5w. Fsg. 3,800 ft.

McPherson Drlg. Co. et al No. 1 Miller, SE SE NE sec. 23-24-5w. Chat 3,365-73 ft.; swb. 15 bbls. wtr. per hr.; trace of oil; C.O. 3,580 ft.

Rice County

Joe Aylward et al No. 1 Oberle, SE SE SW sec. 19-18-10w. Siliceous 3,395 ft.; wtr. 3,402 ft.; D.&A.

Beardmore et al No. 1 Fuller, SW SW SE sec. 23-18-7w. R.U.

Continental Oil Co. and Empire Oil & Ref. Co. No. 1 Nickel, NE SW SW sec. 13-18-8w. Siliceous L. 3,210 ft.; T.D. 3,216 ft.; made pot. of 1,428 bbls. of oil; comp.

Day No. 1 Mason, NW NE NE Sec. 28-21-7w. Chat 3,388-3,400 ft.; flowed 91 bbls. in 50 minutes; shut in 2 hrs., flowed 3 bbls. oil in 10 min.; C.O.

Dickey Oil Co. and Continental Oil Co. No. 1 Newkirk, NE NE SW sec. 11-13-7w. Set 10-in. csg. 184 ft.

Duwe & Schneider No. 1 Wright, NE cor. sec. 26-21-7w. Drlg. 2,530 ft.

Glimac Oil Co. No. 1 Sargent, SE cor. sec. 31-18-6w. Drlg 200 ft.

Grattan et al No. 1 Williams, SW SW NW sec. 17-18-7w. K.C. L. 2,818 ft.; C.O. 3,116 ft.

Gulf Oil Corp. No. 1 Steckel, SW cor. sec. 30-19-10w. Set 10-in. csg. 156 ft.

Permian Oil Co. No. 1 Monroe, C NE NE sec. 9-20-7w. Drlg. 3,465 ft.

Sage et al No. 1 Patton, SW cor. sec. 5-21-7w. Cellar.

Simpson & Noble et al No. 1 Pulliam, C S½ N½ NE sec. 35-19-8w. Rig.

Skiles et al No. 1 Stout, SE cor. sec. 6-21-9w. Bldg. rig.

W. E. Witt No. 1 Hill, SE SE NW sec. 3-20-9w. Drlg. 2,250 ft.

Rooks County

Hartman & Blair et al No. 1 Hall, NW cor. sec. 25-10-17w. Bldg. rig.

J. H. Lester No. 1 Methene, SE SE NE sec. 29-10-20w. Drlg. 700 ft.

Murfin et al No. 1 Washusin, NE NE SE sec. 19-9-16w. U.R. 2,288 ft.

Pryor & Lockhart's No. 1 Bradley, SW SW NE sec. 31-10-16w. Oswald 3,166 ft.; Siliceous 3,658-3,701 ft.; D.&A.

Skaer Oil Corp. et al No. 1 Dryden, NE cor. sec. 25-10-17w. Drlg. 515 ft.

Rush County

Boyle & Grossman No. 1 Wilson, NE cor. sec. 33-17-19w. S.D. 415 ft.

Ira Keith et al No. 1 Dartmouth Savings Bank, SW SW NE sec. 3-17-18w. Oswald 3,335 ft.; R.U.S.T. 3,346 ft.

National Refining Co. No. 1 Werth, NW NE NE sec. 7-16-18w. Anahydrite 1,-195 ft.; drlg. 1,975 ft.

Pryor & Lockhart et al No. 1 Stegman, SW NW NE sec. 11-16-17w. Rig.

Rose Spring Drlg. Co. et al No. 1 Jacoba, SW SE NW sec. 8-16-17w. S.D. 2,825 ft.

Russell County

R. G. Berry et al No. 1 Cook, NE NE SE sec. 19-11-13w. C.O. 2,540 ft.

Bridgeport Machine Co. et al No. 1 Wyckoff, SE NW NE sec. 27-11-13w. Oswald 2,955 ft.; drlg. 3,450 ft.

Central Pet. Co. No. 1 Furthmeyer, NE cor. sec. 28-14-15w. Anhydrite 838 ft.; drlg. 1,560 ft.

Darby Petroleum Corp. and Continental Oil Co. No. 1 Letsch, SE NE NW sec. 34-14-13w. Drlg. 2,625 ft.

Eisenhour & Shaffer No. 1 Humes, SW SW SW sec. 6-14-12w. C.O. 2,435 ft.

Sam Murphy et al's No. 1 Enschuts & Schaffer, SW cor. sec. 10-15-13w. Siliceous 3,311 ft.; T.D. 3,327 ft.; pot. 230 bbls. oil in 24 hrs.; down 4 hrs.

Stearns & Streeter et al No. 1 John Hancock Ins. Co., SE SW SW sec. 31-13-14w. Drlg. 590 ft.

R. C. Tarrant No. 1 Williamson, SE SE NW sec. 9-14-14w.
Tarkio lime 2,515 ft.; T.D. 2,550 ft.; swbd. 5 bbls. oil per hr., and showing of wtr.; acidized with 1,000 gals.; made potential of 243 bbls. of oil.

P. G. Reynolds No. 1 Fredrickson, SE SW SE sec. 6-13-12w. S.D. 2,430 ft.

Wakefield et al No. 1 Krug, NE NW SW sec. 7-15-14w. Rig.

Sedgwick County

Dickey Oil Co. No. 1 Ayers, SW SW NW sec. 12-27-2. Drlg. 1,260 ft.

Stafford County

L. A. Farris et al No. 1 Snyder, SE SE NW sec. 3-21-11w. T.D. 3,111 ft.; 3,000,-000 ft. gas; flowed 390 bbls. oil on second pot. test; comp.

Kessler & Their No. 1 Evans, NE NE NE sec. 26-21-11w. Viola 3,525-42 ft.; T.D. 3,677 ft.; D.&A.

Larlo O. & G. Co. et al No. 1 Andreas, C NW NE sec. 1-21-13w. Drlg. 3,277 ft.

Stanolind O. & G. Co. and Atlantic Oil Prod. Co. No. 1 Shotton, SW cor. sec. 27-22-13w. Anhydrite 735 ft.; drlg. 780 ft.

Sumner County

Craft & Wilson No. 1 Nevitt, NE NW NE sec. 36-32-2e. T.D. 1,879 ft.; set 10-in. csg.

Helmerich & Payne et al No. 1 Elwell, NW NW NE sec. 18-34-1. Chat 3,867 ft.; drlg. 3,935 ft.

Matthews & Derrington No. 1 Berry, NW NW SE sec. 14-35-1. Drlg. 1,305 ft.

Pryor & Lockhart et al No. 1 Knowles, SW cor. sec. 30-30-1. R.U.R.

Texas Co. No. 1 Reed, NE SE SE sec. 11-31-1w. Rig.

Wilcox O. & G. Co. et al No. 1 Hess, SE SE NW sec. 13-34-2w. Drlg. 2,925 ft.

D. J. Wilson et al's No. 1 Clark, 1,320 ft. from W and 25 ft. from S line of NW sec. 15-35-1w. Drlg. 3,700 ft.

Trego County

Central Commercial's No. 1 Wagg, NW NW SE sec. 17-13-21w. K.C. lime 3,843 ft.; bailed 20 bbls. oil per day; acidized; bailed 12 bbls. oil per day; T.D. 3,988 ft.; acidized.

Continental Oil Co. No. 1 Holcomb, E½ E½ NW sec. 26-11-23w. Oswald lime, 3,602 ft.; cor.; T.D. 3,654 ft.; acidized; pmpd. 439 bbls. in 23 hrs.

J. J. Hall et al No. 1 Deines, SE SE SE sec. 12-13-24w. M.I.M.

R. B. McNeely et al No. 1 Lemke, NW NW SW sec. 7-11-22w. Rotary rig.

Woodson County

N. C. Dunn No. 1 Dawson, C NW NE sec. 27-26-13. Drlg. 1,400 ft.

Mendenhall et al No. 1 Hunter, NE cor. sec. 36-25-14. M.I.M.

C. L. Sheedy No. 1 Baker, SE SE NW sec. 2-26-14. Drlg. 1,527 ft.

Max Reynolds No. 1 Guy, NE NE SE sec. 29-25-14. S.D. 1,450 ft.

OKLAHOMA

Week Ending April 18

NORTHERN OKLAHOMA

Beckham County

Wood Pet. & Royalty Corp. No. 1 Blair, C NW SE sec. 32-9-26w. Granite wash 2,-942-71 ft.; granite 2,934 ft.; T.D. 2,989 ft.; S.D.

Caddo County

Denver Prod. & Ref. Co. No. 1 Sah-Can C SE SE sec. 33-10-10w. Drlg. window in pipe, 7,900 ft.

Cleveland County

Hall-Briscoe, Inc. No. 1 Fant, S.-/ SW NE sec. 27-10-2w. S.D. at 7,511 ft.

Asa Lee Mayes, Inc., No. 1 Parsons, SW SW SE sec. 30-9-1. T.D. 3,510 ft.; S.D.

Coal County

Shell Pet. Corp. No. 3 Hill, SE SE NW sec. 30-3-10. Hunton 5,280 ft.; Sylvan 5,355 ft.; Viola 5,448 ft.; S.O. 5,640-57 ft.; Bromide 5,560 ft.; drlg. 5,766 ft.

Comanche County

N. E. Milling No. 1 Miller, NE NE SW sec. 23-4-12w. Drlg. 962 ft.

Garfield County

Herndon Drlg. Co. et al No. 1 Branson, SW SW SE sec. 32-24-3w. Drlg. 4,730 ft.

W. J. Sherry et al No. 1 Haken, NW NW SW sec. 33-20-10w. Miss. lime 5,960 ft.; fshg. 6,240 ft.

Stanolind O. & G. Co. et al No. 1 Brunken, SW SW NE sec. 32-23-4w. Top Dense

5,915 ft.; Dolomite 5,935 ft.; T.D. 5,963 ft.; R.U.S.T.

Hughes County

M. H. Halsey No. 1-A Eustep, NW NW SW sec. 11-8-9.
Wapanucka 3,428 ft.; Cromwell 3,453 ft.; T.D. 3,464 ft.; 2 bailers wtr. an hr.; P.&. and shot. 3,030-45 ft.; est. 10,000,000 ft. of gas; P.B. to 3,412 ft.; re-shot.

George Orr et al No. 1 Morgan, NE SE SW sec. 6-7-9. Cellar and pits.

Phillips Pet. Co. No. 1 Eberle, NE NE SW sec. 12-5-9. Wapanucka 3,887 ft.; Cromwell 4,268 ft.; cored to 4,277 ft.; test showed wtr.

Schumacher et al No. 1 Schumacher, NE NW NE sec. 23-5-10. T.D. 1,782 ft.; D.&A.

Sinclair Prairie Oil Co. et al No. 1 Wilkiy, SW cor. sec. 23-9-8. Spudded.

Sivalls et al No. 1 Montgomery, NW SW NW sec. 7-9-9. Booch 2,950 ft.; drlg. 2,975 ft.

Kay County

W. O. Allen No. 1 Fulton, SE cor. sec. 18-27-4. R.U.S.T.

Kiowa County

W. C. Adams et al No. 2-A Stone, C SE SE NE sec. 34-7-17w.
T.D. 1,193 ft.; machine moved out.

Logan County

Stanolind O. & G. Co., Amerada Pet. Corp. and Eason O. & R. Co. No. 1 Gragg, SW SW NE sec. 20-18-4w. T.D. 6,145 ft.; production est. 1,045 bbls. oil, 40,000,000 ft. gas; comp.

McClain County

Arab Pet. Corp. No. 1 Autry, NW cor. sec. 16-7-3w. T.D. 3,204 ft.; cmtd. to 3,000 ft.; W.O.C.

McCurtain County

Louis Sikes No. 1 Mitchell, C NW SW sec. 12-9s-26. R.U.R.

McIntosh County

Indian Ty. Ill. Oil Co.'s No. 1 Tancred. 1,050 ft. S and 390 ft. E of C. Sec. 9-9-14. Gilcrease sand, 2,695-2,732 ft.; 20,000,000 ft. of gas; Cromwell 3,608 ft.; sand 3,784-85 ft.; Hunton 4,285 ft.; drlg. 4,345 ft.

Oklahoma Oil Corp. No. 1-A Wolf, SE SW SE sec. 35-12-17. Gas sand 800 ft.; dry sands 1,200 ft. and 1,400 ft.; set 6-in. csg. at 2,867 ft.; H.F.W. 3,555-70 ft.

Noble County

Continental Oil Co. No. 1 Pruitt, NW SE SW sec. 19-20-1w Oswego 4,388 ft.; Viola 4,972 ft.; T.D. 4,992 ft.; R.U.S.T.

Okfuskee County

Amerada Pet. Corp. and Stanolind O. & G. Co. No. 1 Wells, SW SW NW sec. 7-11-7. Cellar and pits.

Champlin Ref. Co. No. 1 Thompson, SW SW NW sec 7-13-8. Drlg. 140 ft.

Manahan & Grisso No. 1 Dalton, SE SE SE sec. 36-10-8.
Senora sand 1,722 ft.; T.D. 1,763 ft.; flowed 75 bbls. oil first hour after shot; flowed 225 bbls. in 7 hrs., and 293 bbls. in 9 hrs.; lost 4 hrs. while cleaning out.

Oklahoma County

H. R. Hollenback et al No. 1 Cooper, NW NW NE sec. 15-11-1. Drlg. 4,889 ft.

Sinclair Prairie O. & G. Co. No. 1 Corbett, NE NW NE sec. 17-13-3w.
Washed clean and acidized; flowed 17½ bbls. "gasoline" and 3,000,000 ft. of gas in 24 hrs.; first Wilcox 6,565 ft.; second Wilcox 6,655 ft.; coring.

Osage County

Champlin Ref. Co. No. 1 Osage, SW SW NE sec. 35-25-6. Spudded 235 ft.

Elfred Beck No. 1 Osage, SE SE NE sec. 16-22-7. Drlg. 1,170 ft.

Gray & Folson No. 1 Osage, SW SW NE sec. 33-25-7. Bldg. rig.

Midco Oil Corp. et al No. 1 Osage, NW NW SE sec. 11-23-6. Spudded.

Stoner Bros. No. 1 Osage, NW NE SW sec. 18-22-8. Loc.

Payne County

Denver Producing & Ref. Co. et al No. 1 Pratt, NW cor. sec. 20-18-2. Rig.

Pontotoc County

Mid-Texas Pet. Co. No. 1 Whitney, SW SW SE sec. 20-5-4. T.D. 1,946 ft.; swbd. 100 bbls. oil in 12 hrs.; pmpd. 50 bbls. in 24 hrs.; comp.

Sandback et al No. 1 Sanda, NE NE NE sec. 29-3-5. Drlg. 427 ft.

J. L. Shaw No. 1 Illinois Bankers Life Ins. Co., NW SW NE sec. 1-4-5. Viola 2,599 ft.; cg. 2,837 ft.; S.S.O.

Pottawatomie County

Gulf Oil Corp. No. 1 Bois-Clark, SW SE SE sec. 21-6-4. Dolomite 3,760 ft.; T.D. 3,835 ft.; W.O.C.

Rose Oil Co. et al No. 1 Sparkman, SE NE sec. 33-3n-4e.
C.O. 3,915 ft.; shot at 3,871-90 ft.; swbd. 250 bbls. in 24 hrs.; acidized.

J. L. Shaw No. 1 Illinois Life, NW SE NW sec. 1-4-5. Drlg. 1,590 ft.

Seminole County

Amerada Pet. Corp. et al No. 1 Community, NE NE SW sec. 3-10-5. Hunton. 4,421 ft.; T.D. 4,438 ft.; flowed 617 bbls. in 17 hrs.

Ark Royalty Co. No. 1 Kiker, SE SE NE sec. 9-10-7. Rigged up and S.D.

Imperial Drlg. Co. No. 1 Aldridge, SW NE NW sec. 32-9-8. Calvin. 1,869 ft.; T.D. 1,907 ft.; gas 4,800,000; showing wtr.; P.B. 1,900 ft.

Sinclair Prairie Oil Co. et al No. 1 Harrison, NE NE NW sec. 17-8-8. Cg. 3,-225 ft.

Felmlee & Nichaelson No. 1 Belford, SE NW NE sec. 15-9-8. Sd. 1,460-1,505 ft.; S.O.&G.; S.D. 1,650 ft.

Washita County

L. P. McWhirter's No. 1 fee, SW cor. Sec. 34-8n-19w. S.D. 1,380 ft.

SOUTHERN OKLAHOMA

Bryan County

Trio Oil Co. No. 3 Gilbert, C SW sec. 25-8s-7e. R.U.R.

Carter County

Carter Oil Co. No. 1 Carter-Williams, SW NE SW sec. 27-2s-3w. T.D. 3,105 ft.; flowed 3,309 bbls. in first 24 hrs.

Carter Oil Co. et al No. 1 Leon Voorhees, C SE SW sec. 34-5s-2w. Drlg. 3,408 ft.

Southern States Oil Dev. Co. No. 1 Moore, NE SE NW sec. 30-4s-1w. S.D. 1,155 ft.

Texas Co. No. 1 Cathey, SE NE NE sec. 6-5s-1w. T.D. 4,191 ft.; rng. tbg.

Harmon County

Lloalko Trust, Ltd. No. 1 Crosnoe, SE SE SW sec. 14-3n-25w. Drlg. 1,776 ft.; SG at 1,695 ft. and 1,757 ft.

Jackson County

C. P. Burnham No. 1 Oliver, NW NW SE sec. 26-1-20w. Granite Wash 1,350 ft.; gas 500,000 ft.; set 8¼-in. csg. 1,370 ft.; T.D. 1,380 ft.; W.O.C.

A. H. Jackman No. 1 fee, SW SW SW sec. 27-1s-24w. T.D. 2,525 ft.; fsg.

Universal Oil Co. No. 1 R. W. Briscoe NW SW NE sec. 36-1s-20w. Drlg. 1,730 ft.

Jefferson County

A. T. Campbell No. 1 Trout, SE NE NE sec. 6-8s-7w. Sd. 1,525-57 ft.; drlg. 1,-770 ft.

Geo. Pace No. 1 Gardner, SW cor. Sec. 23-5s-5w. T.D. 2,532 ft.; S.D.O.

Reno Oil Co. No. 1 Gann, SE SW NE sec. 35-5s-4w. Drlg. 2,485 ft.

Johnston County

Equitable O. & G. Co. No. 1 Bellsey, NE SW sec. 12-2s-4e.
Arbuckle lime 1,552 ft.; drlg. 1,936 ft. in lime.

Magnolia Pet. Co. No. 1 Green, NE cor. sec. 12-2s-7. Drlg. 1,100 ft.

Moore & Wirick No. 1 Westheimer & Daube, SE NW NE sec. 19-3s-4e. Drlg. 3,252 ft. in sdy sh.

Love County

Amerada Pet. Corp.'s No. 1-A Westheimer & Daube, SW SE SW sec. 27-6s-2e. Drlg. 7,187 ft. in L.

J. B. Russell et al No. 1 Scott, SW SE SW sec. 29-5s-2e. T.D. 4,968 ft.; S.D. for orders.

Sinclair Prairie Oil Co.'s No. 1 Stockton, SE SE SW sec. 26-6s-2w. T.D. 6,914 ft.; sd. 6,890-6,909 ft.; flowed and swbd. 534 bbls. oil in 5 days; drlg. 7,354 ft.

Marshall County

Helmerich & Payne No. 1 Taliaferro, NW SE SW sec. 26-5s-5e. Loc.

Norman Smith No. 1 Chestnut, NE cor. sec. 23-8s-5e. T.D. 500 ft. S.D.

Pushmataha County

C. W. Whitehead et al No. 1 Misser, SE SW SW sec. 35-3s-18e. T.A.; T.D. 3,540 ft.

Stephens County

W. G. Endicott et al No. 1 McFatridge, NW NW SW sec. 11-3s-9w. Drlg. 1,171 ft. in sh.

Clyde Rhodes et al No. 1-A Doak, SW SW SW sec. 1-1s-5w. T.D. 1,803 ft.; D.&A.

Tillman County

Gulf Oil Corp. No. 1 Wearmouth, SE NW SE sec. 31-1s-18w. T.D. 4,440 ft.; flowing S.W.; S.S.O.&G.; S.D. for orders.

D. S. Smith No. 1-A Hammill, NE NE NW NW sec. 6-5s-15w. S.D. 495 ft.

ARKANSAS

Arkansas County

Ark. O. & G. Co. No. 2 Fischer, 350 ft. S. 200 ft. E. NW cor. NE NW sec. 6-4w. R.U.; W.O.

Calhoun County

Ben G. Barnett No. 1 Freeman Smith, SE cor. sec. 26-15-14. Set 10-in. 634 ft.

Clark County

Sorie Tripanoff, tr., No. 1 W. Gibbons, sec. 27-8-18. Arranging to test 557 ft.

Dallas County

Kel-Mac Lease & Royalty Co. No. 2 R. Owens, NW cor. NW SW sec. 26-10-16. Drlg. 1,112 ft.

Hempstead County

Dixie Drlg. Co. No. 1 Wheatley, 330 ft. S. 50 ft. E. NW cor. SW NE sec. 14-11-26. R.U. and S.D.

Fitzwater et al No. 2 Lafferty, C NW sec. 17-14-24. Tested S.W. and W.O. 2,047 ft.

Murdock-May & Easton No. 1 Conway est., 330 ft. N and E, SW cor. NW SW sec. 17-14-24. Set 12½-in. 80 ft.; S.D. 120 ft.

LaFayette County

Earl F. Fox No. 2 Coleman Bros., NE NE sec. 30-16-24. S.D. 3,760 ft.

Erwin & Leach No. 3 Bodcaw Lbr. Co., 330 ft. S and E, NW cor. sec. 20-16-13. Drlg. 5,726 ft.

Joe Modisett No. 1 Red River Lbr. Co., C SW SW sec. 21-19-14. Set 7-in. 5,300 ft.; T.D. 5,310 ft.

Transportation Pet. Co. No. 1 Cockran, 330 ft. S and W, NE cor. SE sec. 26-19-25. Tested S.W.; T.A. 3,675 ft.

Miller County

Odell Hinson No. 1 Montana Realty Co., NE cor. NW NW sec. 3-17-28. Set 12½-in. csg. 238 ft.

King Oil Corp. No. 1 G. W. Crank, SW NE sec. 19-16-25. S.D.; W.O. 3,906 ft.; (corrected).

C. V. Lenz No. 8 Dale, sec. 24-15-26. Cg. 2,840 ft.

M. L. Luckett No. 1 Beck, sec. 34-15-26. Set 10-in. 160 ft.; drlg. 700 ft.

L. H. Mahon et al No. 1 Miller Land & Timber Co., SW cor. SE sec. 29-18-27. S.D. 1,812 ft.

Ouachita County

L. L. McDonald No. 1 Langley, 330 ft. N and E, SW cor. NE SW sec. 19-16-15. Cg. 2,016 ft.

Phillips Pet. Co. No. 1 J. D. Reynolds, 330 ft. N and W, SE cor. SE NW sec. 27-15-15. Set 9⅝-in. 4,892 ft.; T.D. 4,-908 ft.

J. D. Reynolds No. 1 McKenzie, 204 ft. S, 300 ft. W, NE cor. SE SW sec. 34-15-16. Fsg. for cable tools 1,970 ft.

Union County

Arkansas Southern Oil Co. No. 1 F. R. Laney, sec. 30-19-16.
Installing larger rig. 175 ft.

Beuharal Oil Corp. No. 1 R. Pumphrey, SE cor. NE sec. 11-17-14. Drlg. 50 ft.

J. C. Bucbee No. 1 Ezzell, SW cor. NE NW sec. 13-17-15. Junked and abd. 3,-572 ft.; skidding over.

McCressien Oil Co. No. 3 D. Norman, NE cor. NE SE sec. 3-18-13. W.O. jack to pump, 3,556 ft.

LOUISIANA

NORTH LOUISIANA PROVEN

Caddo—Rodessa

Ark.-La. Gas Co. No. 12 Rodessa Oil & Land Co., NW SE sec. 22-23-16. Drlg. 4,656 ft.

Ark.-La. Gas Co. No. 14 Rodessa O. & Land Co., SW cor. NW sec. 23-23-16. Drlg. 3,985 ft.

Ark.-La. Gas Co. No. 15 Rodessa Oil & Land Co., NE cor. SW NW sec. 23-23-16. Set 16-in. 257 ft.

Ark-La Gas Co. No. 9-A Rodessa Oil & Land Co., SE NE sec. 22-23-16. Drlg. 5,230 ft.

Bartex P. L. Co. No. 1 Adams, NW cor. sec. 17-23-15. Set 16-in. 252 ft.; drlg. 2,325 ft.

Bartex Pipe Line Co. No. 3 Norton Est., SE NE sec. 18-23-15. Arranging set 7-in. 6,018 ft.

Bartex Pipe Line Co. No. 4 Norton Est., SW cor. SW NW sec. 17-23-15. Drlg. 5,030 ft.

Bartex Pipe Line Co. No. 1 Robinson, C E½ NE SE sec. 18-23-15. S.D. 6,028 ft.

Bartex Pipe Line Co. No. 2 Robinson, center W½ NW SW sec. 17-23-15. Comp.; 11 B.P.H., 6,057 ft.

Bartex Pipe Line Co. No. 2 Rodessa Oil & Land Co., NE SE sec. 13-23-15. Cg. 5,-923 ft.

Blackwell O. & G. Co. No. 1 Nugent, SW cor. NE SE sec. 8-23-15. Drlg. 2,590 ft.

S. F. Borden No. 1 K.C.S., NW cor. SW sec. 23-23-16. Drlg. 4,968 ft.

Danciger O. & R. Co. No. 1 Francis heirs, C Lot 2, Blk. 10, sec. 23-23-16. Drlg. 4,295 ft.

Danciger O. & R. Co. No. 1 J. F. Neugent, C Lot 3, Blk. 12, sec. 23-23-16. Drlg. 5,050 ft.

Duncan & Woods No. 1 Andrews, Lot 5, Blk. 21, sec. 23-23-16. Drlg. 4,120 ft.

Haynes Prod. Co. No. 11 Lawton, 330 ft. N, 490 ft. E. SW cor. sec. 14-23-16. Set 7-in. 5,995 ft.

Haynes Prod. Co. No. 12 Lawton, NE cor. SW SW sec. 14-23-16. Drlg. 5,337 ft.

Haynes Prod. Co. No. 13 Lawton, NW cor. SE SW sec. 14-23-16. Drlg. 4,127 ft.

Haynes Prod. Co. No. 4 Otwell, SE cor. sec. 15-23-16. Comp.; 130 P.B.H., 6,004 ft.

Haynes Prod. Co. No. 5 Otwell, NE cor. SE SE sec. 14-23-16. Drlg. 5,490 ft.

Haynes Prod. Co. No. 2-B Pitts, SE cor. NW SE sec. 12-23-16. Comp.; 80 B.P.H., 6,033 ft.

Haynes Prod. Co. No. 3-A Mattie Pitts, SE cor. SE SW sec. 11-23-16. Drlg. 4,135 ft.

Haynes Prod. Co. No. 2 Zylka, NE cor. SW sec. 10-23-16. Drlg. 3,920 ft.

J. Edward Jones No. 1 Ashley, Lot 6, Blk. 13, sec. 22-23-16. Drlg. 4,843 ft.

J. Edward Jones No. 1 Gibson, SW cor. SE SW sec. 22-22-16. Set 16-in. 250 ft.; drlg. 1,560 ft.

R. W. Norton No. 2 Atkins Unit, NE cor. sec. 15-23-15. Set 13⅜-in. 200 ft.; drlg. 3,399 ft.

R. W. Norton No. 1 J. Elder Unit, NE cor. sec. 22-23-16. Comp.; 16 B.P.H., 6,045 ft.

R. W. Norton No. 2 Fosque Unit, SW cor. sec. 20-23-16. Set 13⅜-in. 209 ft.; set 9⅝-in. 2,126 ft.

W. F. Lacey No. 1 Tyson, NE cor. SE NW sec. 24-23-16. Drlg. 5,036 ft.

Lyons & Neely No. 1 Blaxton, C Lot 11 and 12, Blk. 22, sec. 22-23-16. Set 7-in. 6,008 ft.

M. H. Marr No. 3 Hunter, NW cor. SW sec. 13-23-16. Comp.; 14 B.P.H., 6,047 ft.

M. H. Marr No. 5 Hunter, NW cor. SW sec. 13-23-16. Drlg. 4,749 ft.

M. H. Marr No. 1 Peak, SW SE sec. 11-23-16. Set 7-in. 6,020 ft.; T.D. 6,040 ft.

R. W. Norton No. 4-A Caddo Levee Board, NW NE sec. 21-23-16. Drlg. 3,856 ft.

R. W. Norton No. 1 Slattery, NW cor. sec. 28-23-16. Drlg. 5,855 ft.

O'Brien Bros. No. 3 Rodessa Oil & Land Co., SW cor. NW SW sec. 14-23-16. Set 16-in. 230 ft.

Travis et al No. 1 Raney, 990 ft. W of C sec. 17-23-15. S.D. 6,080 ft.

Tri-State O. & G. Co. No. 1 F. L. Westbrook, C Lot 6, Blk. 12, sec. 23-23-16. Set 16-in. 340 ft.

Tri-State-Williams & Peterbaugh No. 1 Ellis, Lot 2, Blk. 20, Townsite, sec. 23-23-16. Drlg. 5,822 ft.

United Gas Pub. Ser. Co. No. 6 Ardis & Co., SE cor. sec. 14-23-16. Cg. 6,008 ft.

United Gas Pub. Ser. Co. No. 7 Ardis & Co., SW cor. SE SW sec. 14-23-16. Drlg. 5,281 ft.

United Gas Pub. Ser. Co. No. 1 Maroun Unit, 330 ft. S and E. NW cor. sec. 24-23-16. Drlg. 4,629 ft.

United Gas Pub. Ser. Co. No. 3 Miller, SW cor. NW NW sec. 14-23-16. Set 13⅜-in. 315 ft.

United Gas Pub. Ser. Co. No. 2 M. L. Pitts Unit, NE SW sec. 13-23-16. Testing 6,069 ft.

United Gas Pub. Ser. Co. No. 3 M. L. Pitts Unit, NE SW sec. 13-23-16. Set 7-in. 6,025 ft.; T.D. 6,050 ft.

United Gas Pub. Ser. Co. No. 4 M. L. Pitts Unit, SW cor. sec. 13-23-16. Drlg. 5,684 ft.

United Gas Pub. Ser. Co. No. 2 N. S. Spearman Unit, SW NW sec. 18-23-15. Drlg. 4,998 ft.

United Gas Pub. Ser. Co. No. 3 Thomas Unit, Lots 4 and 5, Blk. 5, Townsite, sec. 23-23-16. Set 13⅜-in. 314 ft.; drlg. 2,510 ft.

United Gas Pub. Ser. Co. No. 4 Thomas Unit, NW cor. NE NW sec. 23-23-16. Set 13⅜-in. 319 ft.; set 9⅝-in. 2,175 ft.

United Gas Pub. Ser. Co. No. 5 Thomas Unit, NW cor. SE NW sec. 23-23-16. Set 13⅜-in. 318 ft.; drlg. 2,172 ft.

United Gas Pub. Ser. Co. No. 8 Tyson Unit, SW NW sec. 13-23-16. Set 7-in. 6,045 ft.

United Gas Pub. Ser. Co. No. 9 Tyson, NE cor. sec. 14-23-16. Cg. 6,032 ft.

United Gas Pub. Ser. Co. No. 1 U. S. Govt., sec. 29-23-16. Set 13⅜-in. 350 ft.; drlg. 4,729 ft.

United Gas Pub. Ser. Co. No. 11 Rodessa Oil & Land Co., NW cor. sec. 23-23-16. Comp.; 42 B.P.H., 6,013 ft.

United Gas Pub. Ser. Co. No. 13 Rodessa Oil & Land Co., SW NE sec. 22-23-16. Drlg. 5,262 ft.

United Gas Pub. Ser. Co. No. 14 Rodessa Oil & Land Co., NE cor. sec. 22-23-16. Drlg. 5,081 ft.

United Gas Pub. Ser. Co. No. 15 Rodessa Oil & Land Co., NE cor. sec. 22-23-16. Cg. 5,995 ft.

United Gas Pub. Ser. Co. No. 16 Rodessa Oil & Land Co., NE cor. NW NW sec. 22-23-16. Drlg. 5,722 ft.

United Gas Pub. Ser. Co. No. 17 Rodessa Oil & Land Co., NW cor. sec. 22-23-16. R.U.

United Gas Pub. Ser. Co. No. 18 Rodessa Oil & Land Co., SW cor. NE SE sec. 15-23-16. Set 13⅜-in. 315 ft.

United Gas Pub. Ser. Co. No. 19 Rodessa Oil & Land Co., SE cor. NE SE sec. 15-23-16. R.U.

United Gas Pub. Ser. Co. No. 20 Rodessa Oil & Land Co., SE cor. SE NE. Set 16-in. 312 ft.; drlg. 1,142 ft.

United Gas Pub. Ser. Co. No. 21 Rodessa Oil & Land Co., NE cor. SE NE sec. 15-23-16. Set 16-in. 314 ft.; set 10¾-in. 2,200 ft.

Sabine Parish—Zwolle

Ellis Prod. Co. No. 1 Williams, 330 ft. S and W, NE cor. SE NE sec. 23-7-11. Tested dry; S.D.; W.O. 2,806 ft.

N. LOUISIANA WILDCATS

Bienville Parish

DeSoto O. & G. Co. No. 1 C. R. Mower, 270 ft. S, 400 ft. W. NE cor. NW SW sec. 9-16-10. S.D. 3,050 ft.

Bossier Parish

Geo. H. Bringhurst et al No. 1 Buckley, NE SW sec. 36-21-13. Set 7-in. 2,290 ft.; T.D. 2,300 ft.

United Gas Pub Ser. Co. No. 1-A A. J. Murff, NW cor. sec. 17-17-11. Drlg. 4,-712 ft.

Caddo Parish

Bayou State Oil Corp. No. 4 Brown, SE cor. SE NE sec. 28-23-15. Drlg. 925 ft.

Falcon Oil Co. No. 15 Deckson, NW SE

sec. 27-20-15. Deepening from 2,325 ft. Hillman et al No. 2 Muslow, NW SE sec. 33-21-15. Junked and abd. 2,140 ft.

Juan et al No. 1 Hobbs, NE NE sec. 28-21-15. W.O.S.R. 1,669 ft.

Press & Lambert No. 1 fee, SW cor. NE SE sec. 10-20-15. R.U.

Pyramid O. & G. Co. No. 1-A S. R. Wheeler, 1,320 ft. S, 1,500 ft. W, NE cor. sec. 16-18-16. Set 9⅝-in. 3,945 ft.

Sport Oil Corp. No. 1-D Muslow, SE cor. sec. 5-20-15. Set 9⅝-in. 2,670 ft.

Caldwell Parish

Critchett & Woods No. 1 Kyles, NE cor SW NE sec. 18-11-3e. P.B. to 1,300 ft.; old T.D. 1,740 ft.

Critchett & Woods No. 2 La. Cen. Lbr. Co., NW cor. NW SE sec. 18-11-3e. S.D.; rig repair, 1,002 ft.

Claiborne Parish

Triangle Drlg. Co. No. 1 Kilpatrick, 660 ft. N and E, C sec. 7-19-5. Drlg. 5,094 ft.

United Gas Public Service Co. No. 2 Durfett, 660 ft. N and 1,980 ft. E, SW cor sec. 31-20-5. Cg. 6,133 ft.

Concordia Parish

Zeni Oil Co. No. 1 Young, 1,200 ft. W, 100 ft. N, SE cor. sec. 28-6n-8e. S.D. 1,130 ft.

De Soto Parish

S. S. Alexander No. 1 G. R. Stell, 330 ft S and W, NE cor. sec. 5-12-16. Drlg. 6,002 ft.

A. G. Halbach et al No. 1 Staton, 150 ft. N and E, SW cor. SE sec. 29-13-14. S.D. 3,264 ft.

Larkin & Waar No. 1 Jackson, sec. 1-11-14. Set 10¾-in. 572 ft.; drlg. 4,433 ft.

R. C. Payne No. 1 Harris, NE cor. SW SE sec. 11-13-14. S.D. 1,200 ft.

Union Pet. Co. No. 1 Hill, sec. 3-10-13. S.D. 1,400 ft.

Franklin Parish

S. C. Jensen No. 1 Bailey, 660 ft. N and W of C sec. 12-11-6e. S.D. 800 ft.

Grant Parish

Acadian Prod. Corp. No. 7 Swope, NE cor. SE SE sec. 18-9-1e. Set 10-in. 60 ft.; drlg. 472 ft.

Alexander et al No. 1 Maxwell, sec. 9-9-1e. W.O.S.R. 1,538 ft.

Law Oil Co. No. 1 Long, SE cor. SW sec. 9-9-1e. D.&A. 1,575 ft.

Taw Oil Co. No. 2 Bradford, sec. 16-9-1e. Drlg. 986 ft.

Taw Oil Co. No. 1 Bradford, NE cor. NW sec. 16-9-1e. Set 10-in. 60 ft.

La Salle Parish

Montague Oil Co. No. 7-A Zenonia Lbr. Co., NE cor. sec. 10-9-1e. Tested S.W. and W.O. 1,520 ft.

Lincoln Parish

Ark.-La. Gas Co. No. 1 C. E. Causey, NW cor. NE NW sec. 32-19-2w. Coring 4,632 ft.

Caldwell Land & Timber Co. No. 1 J. K. Hammons, 330 ft. S and E, NW cor. SE SW sec. 30-18-1w. S.D. 640 ft.

Herman L. Brown et al No. 1 S. Gardner, 330 ft. N, 330 ft. E, SW cor. NW NE sec. 1017-4w. Drlg. 4,739 ft.

Morehouse Parish

J. B. Collins et al No. 1 E. M. Clarke, SE NE sec. 10-20-7e. Rigging up.

United Gas Pub. Ser. Co. No. 33 Crossett, NE cor. sec. 34-21-4e. Comp.; 5,000,000 ft. gas, 2,145 ft.

United Gas Pub. Ser. Co. No. 35 Crossett, sec. 22-21-4e. Set 7-in. 2,093 ft.

United Gas Pub. Ser. Co. No. 19 Tensas, NE SW sec. 5-21-4e. Comp.; 7,000,000 ft. gas, 2,148 ft.

Red River Parish

I. J. Allen No. 1 Franklin Realty Co., sec. 20-11-9. Drlg. 50 ft.

Richland Parish

J. S. Morrisey No. 1 Jones, 1,293 ft. N, 636 ft. E, SW cor. sec. 15-18-7e. S.D. 1,370 ft.

Arthur Wray No. 1 Slocum, 2,436 ft. S 560 ft. W, NE cor. sec. 10-17-6e. S.D. 1,676 ft.

Sabine Parish

I. J. Allen No. 1 Paul, sec. 24-9-14. R.U.

M. C. Forsman No. 1 Patrick, NE SW sec. 21-9-13. Set 8-in. 75 ft.

J. E. Daughtie et al No. 3 Edwards, SW cor. sec. 29-9-13. Comp.; 250 B.P.D., 1,700 ft.

Posey Sisters Oil Co. No. 2 A. J. Burkett, C NE NE sec. 10-9-13. Comp.; pump 5 bbls., 1,973 ft.

Posey Sisters Oil Co. No. 3 A. J. Burkett, SW cor. SE NE sec. 10-9-13. R.U.

Claude H. Smith No. 1 Whitney Corp. 330 ft. S, 990 ft. W, NE cor. sec. 19-10-13 Set 7-in. 1,514 ft.; T.D. 1,523 ft. (cor.).

A. H. Tarver No. 2 Baker, NW cor. NE sec. 36-8-12. D.S. stuck 5,200 ft.

Whitehurst & Myers No. 1 Paul, SE cor. SW sec. 24-9-14. Drlg. 1,850 ft.

Tensas Parish

H. M. Jones et al No. 1 Chicago Mill & Lbr. Co., NE cor. sec. 30-12n-10e. Drlg. 485 ft.

Union Parish

Boucher & Pace No. 1 Frost-Johnson, NE NE sec. 27-21-1e. Installing heavy rig 3,241 ft.

Carbona Consd. No. 1 Bird, SW cor. SE sec. 27-22-3e. R.U.

J. E. Farrell No. 14 State, 1,219 ft. S. 3,166 ft. E, NW cor. sec. 33-21-4e. Drlg. 50 ft.

Interstate Nat. Gas Co. No. 46 fee, SE NE sec. 25-20-3e. Comp.; 6,000,000 ft. gas, 2,161 ft.

United Gas Pub. Ser. Co. No. 3 Stovall, NE NW sec. 33-21-4e. Rigging up.

Vernon Parish

Liano Del Rio Co. No. 2 Gulf Lbr. Co., 1,285 ft. S, 1,000 ft. W, NE cor. sec. 7-1n-9w. S.D. 2,960 ft.

Webster Parish

J. L. Edwards No. 1 Hooper, 330 ft. S and E, NW cor. SW sec. 8-17-9. Fsg. for rotary slip, 2,155 ft.

J. P. Evans et al No. 1 T. Crichton, NE SE sec. 35-18-9. Drlg. 5,009 ft.

Ohio Oil Co. No. 1 R. L. Holloway, 660 ft. S, 760 ft. W, C sec. 23-21-10. Coring 6,976 ft.

SOUTH LOUISIANA FIELDS

Bayou Mallet—Acadia Parish

Superior Oil Co. No. 2 Bradley, sec. 47-7s-1e. Drlg. sd. and sh. 6,346 ft.

Black Bayou—Cameron Parish

Shell Pet. Corp. No. 31 Watkins, sec. 8-12s-12w. T.D. 5,587 ft.; P.B. to 5,387 ft.; swbg.

Shell Pet. Corp. No. 32 Watkins, 65 ft. S and 4,243 ft. W of NE cor. sec. 12-12s-12w. R.U.

Caillou Island—Terrebonne Parish

Texas Co. No. 2 Terrebonne Bay, sec. 19-23s-20e. T.D. 6,862 ft.; I.P. 1,465 ft.; 65 B.P.D.; ⅝-in. choke; T.P. 1,180 lbs.

Texas Co. No. 33 State. Sd. 4,115 ft.; no report.

Texas Co. No. 34 State, sec. 34-23s-22e. Cg. sd. at 4,170 ft.

Cameron Meadows—Cameron Parish

Burton Sutton Oil Co. No. 12 School Land sec. 16-14s-13w. T.D. 3,300 ft.; flowed 454 B.P.D. then went dead.

Burton Sutton Oil Co. No. 13 School Land, sec. 16-14s-13w. Sh. 2,312 ft.; no report.

Burton Sutton No. 14 School Land, sec. 16-14s-13w. Drlg.

Burton-Sutton No. 3-A School Land, sec. 16-14s-13w. Drlg. sh. 693 ft.

Humble-Magnolia No. 16 Cameron Meadows. Drlg. sh. 2,594 ft.

Texas Co. No. 2 Miami Corp., sec. 15-14s-13w. Drlg. sd. and sh. 2,915 ft.

Cheneyville—Rapides Parish

Amerada Pet. Corp. No. 3 Weill, sec. 53-1s-2e. W.O.C. 85 ft.

Texas Co. No. 1 Weil, sec. 53-1s-2e. R.U.

Texas Co. No. 2 Weil, sec. 53-15s-2e. T.D. 5,732 ft.; stg. csg. to comp.

Texas Co. No. 1 State (Andrade), sec. 5-15s-2e. S.D. 86 ft.

Choctaw Dome—Iberville Parish

Standard Oil Co. No. 8 Myrtle Grove Wilburt, sec. 52-9s-11e. T.D. 5,828 ft.; P.B to 2,450 ft. and sdtkd.; drlg. sh. 2,911 ft.

Darrow—Ascension Parish

Humble O. & R. Co. No. 11 Community, sec. 32-10s-2e. Drlg sh. 5,569 ft.

Humble O. & R. Co. No. 6 Gumble, sec 33-10s-2e. T.D. 6,157 ft.; P.B. to 3,017 ft.; sdtkd. at 3,027 ft.; cg. sd. 5,796 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 2 State, sec. 5-22s-16e. Drlg. sd. and sh. 6,755 ft.

Edgerly—Calcasieu Parish

J. G. Sutton No. 17 Lillard, sec. 28-9s-11w. S.D. 1,552 ft.

Thompson & Mossart No. 1 Fairchild. R.U.

Four Isle—Terrebonne Parish

Texas Co. No. 5 State, sec. 24-21s-16e. Drlg. sd. 4,941 ft.

Garden Island Bay—Plaquemines Parish

Texas Co. No. 18 State, sec. 37-23s-32e. T.D. 4,511 ft.; I.P. 1,050 B.P.D.; ⅝-in. choke; T.P. 750 lbs.

Gillis—Calcasieu Parish

Fohs Oil Co. No. 1 Frost, sec. 11-9s-8w. Drlg sh. 7,282 ft.

Fohs Oil Co. No. 1 Mary McIver, sec. 14-9s-8w. Derrick.

Union Sulphur Co. No. 1 J. A. Bel estate. Sh. 7,689 ft.

Union Sulphur Co. No. 1 G. S. Cole, sec. 12-9s-8w. Sh. 5,973 ft.

Union Sulphur Co. No. 6 Castle, sec. 13-9s-8w. T.D. 7,736 ft.; perforated csg. from 5,427-32 ft.; D.&A.

Union Sulphur Co. No. 6 Powell Lbr. Co., sec. 12-9s-8w. Drlg. sh. and L. 3,273 ft.

Union Sulphur Co. No. 7 Powell Lbr. Co., sec. 12-9s-8w. Drlg. sh. 1,474 ft.

Hackberry—Cameron Parish

Calcasieu Oil Co. No. 6 Hanzen, sec. 14-12s-10w. Drlg. sh. 4,910 ft.

Gulf Ref. Co. No. 20 Irwin, sec. 12-12s-10w. T.D. 7,806 ft.; P.B.; sh. 7,596 ft.

Stanolind O. & G. Co. No. 16-A School Land, sec. 16-12s-12w. Drlg. sd. 3,078 ft.

Stanolind O. & G. Co. No. 21-B Gulf Land sec. 14-12s-10w. S.D. 6,963 ft.; top salt 6,948 ft.; P.B. and sdtkd.; drlg. in new hole at 4,278 ft.

Stanolind O. & G. Co. No. 23-B Gulf Land, sec. 14-12s-10w. Drlg.

Texas Co. No. 19-B State, sec. 13-12s-9w. Drlg. sd. with odor of oil at 6,714 ft.

Iowa—Jefferson Davis Parish

Shell Pet. Corp. No. 7 Stafford, sec. 18-9s-7w. Drlg. sh. and L. 5,708 ft.

Shell Pet. Corp. No. 1 Zimmerman, 10¾-in. csg. at 1,328 ft.; T.D. 1,331 ft.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1 Banta, sec. 49-13s-9e. Drlg. hd. rock 7,190 ft.; no report.

Herton Oil Co. No. 1 Carter, sec. 38-13s-9e. T.D. 6,767 ft.; stg. csg. to comp.

Herton Oil Co. No. 3 Roane, sec. 40-13s-9e. Drlg. wtr. sd. 5,974 ft

Jennings—Acadia Parish

Shell Pet. Corp. No. 1 Conover, sec. 40-9s-2w. Drlg. sd. and L. 5,920 ft.

Stanolind O. & G. Co. No. 16 Houssiere-Latrielle, sec. 47-9s-2w. Sh. 4,567 ft.; no report.

Lafitte—Jefferson Parish

Texas Co. No. 3 Rigolettes, sec. 30-17s-24e. Top oil sd. 9,395 ft.; 7⅝-in. csg. 9,396 ft.; T.D. 9,455 ft.; I.P. 1,612 B.P.D.; ⅝-in. choke; T.P. 1,450 lbs.

Texas Co. No. 4 Lafitte, sec. 20-17s-24e. Drlg. sd. and L. 6,117 ft.

Lake Barre—Terrebonne Parish

Texas Co. No. 37 Lake Barre State. Drlg. sd. 1,598 ft.

Texas Co. No. 39 State, sec. 20-12s-20e. Drlg. sh. 3,063 ft.

Leesville—LaFourche Parish

Gulf Prod. Co. No. 8 Allen Land Co., sec. 21-21s-22e. Sh. 3,161 ft.

Lincoln Oil Co. No. 2 Constentine, sec. 27-21s-22e. Drlg. sdy. sh. 4,058 ft.

Texas Co. No. 44 Leesville, sec. 27-21s-22e T.D. 4,200 ft.; I.P. 546 B.P.D.; ½-in. choke; T.P. 500 lbs.

Texas Co. No. 45 Leesville, sec. 34-21s-22e. Drlg. sh. 4,930 ft.

Texas Co. No. 46 Leesville, sec. 27-21s-22e. Drlg. sh. 1,600 ft.

New Iberia—Iberia Parish

Canal Oil Co. No. 3 Sabatier, sec. 54-1s-7e. Drlg. sh. 2,330 ft.

Kitos Oil Co. No. 2-A Sealey, sec. 56-12s-7e. W.O.C. 862 ft.

Teche Oil Co. No. 1 Schuring, sec. 52-12s-7e. Drlg. sh. 310 ft.

Texas Co. No. 1 Smith, sec. 72-12s-7e. W.O.C. at 1,104 ft.

Roanoke—Jefferson Davis Parish

Humble O. & R. Co. No. 3 C. N. Taylor, sec. 12-9s-4w. Drlg. sdy. L. 7,835 ft.

Shell Pet. Corp. No. 5 Kratzer, sec. 12-9s-4w. Drlg. sd. 8,018 ft.

Port Barre—St. Landry Parish

Emerson Corp. No. 4 Sibille, sec. 29-6s-5e. Cg. sd. 3,464 ft.

Pacheon Oil Co. No. 1 Gauden, Sec. 4-6s-6e. T.D. 3,718 ft.; perf. above 3,687 ft.; bailing.

Pan American Prod. Co. No. 1 Watkins. T.D. 5,669 ft.; rmg.

Texas Co. No. 1 Futral, sec. 20-6s-5e. Drlg. sh. 1,310 ft.

St. Martinville—St. Martin Parish

Continental Oil Co. No. 1 fee, sec. 18-11s-6e. Drlg. sh. 6,628 ft.

Tide Water Oil Co. No. 2 Smedes, sec. 57-11s-6e. T.D. 8,735 ft.; P.B. to 7,375 ft.; drlg. out.

Sorrento—Ascension Parish

Athens Oil Co. No. 4 United land, sec. 15-10s-4e. T.D. 4,332 ft.; 7-in. csg. at 4,291 ft.; S.D.

Sorrento Oil Co. No. 1 Bernard, sec. 9-19s-4e. Derrick.

Starks—Calcasieu Parish

L. R. Welhite No. 1 Industrial Lbr. Co., sec. 19-9s-12w. T.D. 3,883 ft.; C.O.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 824 fee, sec. 20-9s-10w. Rig.

Union Sulphur Co. No. 822 fee, sec. 29-9s-10w. Drlg. sh. 2,330 ft.

Tepetate—Acadia Parish

Continental Oil Co. No. 2 Homeseekers sec. 29-7s-2w. T.D. 8,318 ft.; I.P. 368 B.P.D.; T.P. 1,200 lbs.; C.P. 1,500 lbs.

Continental Oil Co. No. 1 Hugh Breckenridge, sec. 29-7s-2w. Drk.

Continental Oil Co. No. 1 P. Johnson, sec. 30-7s-2w. Drk.

Continental Oil Co. No. 2 C. Miller, sec. 29-7s-2w. T.D. 8,315 ft.; I.P. 297 B.P.D.

Continental Oil Co. No. 1 A. Ortego, sec. 29-7s-2w. Cg. sd. 8,309 ft.

Continental Oil Co. No. 1 Adras Young, sec. 29-7s-2w. Drlg. sh. and L. 7,290 ft.

General Crude Oil Co. No. 1 Vincent, sec. 31-7s-2w. Drlg. sh. 1,700 ft.

Loffland Bros. No. 1-A L. C. Bowles, sec. 28-7s-2w. T.D. 8,380 ft.; S.W. sd. 8,363-80 ft.; S.D.

Loffland Bros. No. 1-B L. C. Bowles, sec. 33-7s-2w. T.D. 7,419 ft.; P.B. to 6,450 ft.; sdtkd. at 6,770 ft.; drlg. sd. and sh. 7,168 ft.

Vinton—Calcasieu Parish

Wilson Broach No. 19 Wilson Strip, sec. 33-10s-12w. Rig.

White Castle—Iberville Parish

Shell Pet. Corp. No. 3 Shingle, 650 ft. S, 600 ft. E of NW cor. sec. 12-11s-12e. Rig.

S. LOUISIANA WILDCATS

Acadia Parish

Limited Oil Co. No. 1 Miller, sec. 47-8s-3e. Drk.

Magnolia Pet. Co. No. 1 Homeseekers Dev. Co., sec. 54-10s-1w. Rig.

Allen Parish

Humble O. & R. Co. No. 1 J. A. Bell, sec. 28-6s-7w. Drlg. 3,340 ft.

Avoyelles Parish

Frost Oil Co. No. 1 Hinds Lbr. Co., sec. 3-3n-4e. R.U.

Cameron Parish

Magnolia Pet. Co. No. 1 Hebert, sec. 13-12s-9w. Rig.

West Feliciana Parish

R. L. Morris (C. L. Thompson) No. 1 Percy, sec. 89-1s-4w. Drlg. sh. 5,379 ft.

Iberia Parish

Jefferson Lake Oil Co. No. 1 State, Twp. 12s-5e. T.D. 8,610 ft.; preparing to test through perforation 8,453-79 ft.

Jefferson Lake Oil Co. No. 322 State Lake Piegneur. Drlg. sh. and L. 4,992 ft.

Jefferson Davis Parish

J. K. Lewis No. 1 Lockmore, sec. 32-7-6. S.D. 7,030 ft.

Shell Pet. Corp. No. 1 Lacassan, sec. 20-11s-5w. T.D. 9,802 ft.; P.B. to 8,176 ft.; drlg. sdy. L. 8,542 ft.

Livingston Parish

Bunte O. & G. Co. No. 1 Addison Trust Co., sec. 7-7s-3e. Moving in.

Plaquemines Parish

Venice Corp. No. 1 Manhattan L. & F. Co., sec. 26-21s-29e. S.D. 3,512 ft.

St. James Parish

Shell Pet. Corp. No. 1 Colonial Sugar, sec. 5-12s-5e. T.D. 6,517 ft.; S.D.

St. Landry Parish

Limited Oil Co. No. 1 Miller Est., sec. 47-8s-4e. Bldg. fdns.

St. Martin Parish

Southern Oil (S. C. Yingling et al) No. 1 State, sec. 13-9s-8w. T.D. 3,172 ft.; perf. csg. 3,010-50 ft.; flowed by heads and then went dead; making second test 2,957-65 ft.

Texas Co. No. 8 St. Martins Land, sec. 17-8s-7e. Drlg. L. and sh. 7,712 ft.

Rapides Parish

Foster Oil Co. No. 1 J. F. Hogan, sec. 2-1s-2e. T.D. 6,005 ft.; showed S.W. on D.S.T. from 5,702-51 ft.; D.&A.

Vermillion Parish

Continental Oil Co. No. 1 O. C. Hebert, sec. 20-12s-3e. 18⅝-in. csg. 260 ft.

TEXAS

Week Ending April 18

GULF COAST FIELDS

Raccoon Bend—Austin County

Humble O. & R. Co. No. 6 Hardy, Wm. Smeathers Sur. T.D. 3,227 ft.; P.B. to 3,215 ft.; prep. to swb.

Byron Mound—Brazoria County

Texas Co. No. 3 Freeport Sulphur Co., C. Areola Sur. Drlg sdy. L. 3,587 ft.

Damon Mound—Brazoria County

Sinclair Prairie Oil Co. No. 23 Jackson, H. Darst Sur. Cmtd. sur. csg. 100 ft.

Hastings—Brazoria County

Humble O. & R. Co. No. 6 Cannon, H.T. &B. Sur. Cg. oil sd. 6,060 ft.

Stanolind O. & G. Co. No. 3 J. W. Miller, A.C.H.&B. Sur. No. 2. Drlg. sd. and sh. 4,305 ft.

Stanolind O. & G. Co. No. 2 Brown, H.T. &B. Sur. No. 29. Drlg. sd., sh. and shells at 4,429 ft.

Stanolind O. & G. Co. No. 3 Cannon, H. T.&B. Sur. No. 36. W.O.C. 110 ft.

Stanolind O. & G. Co. No. 4 Grote, A.C. H.T.&B. Sur. No 2. T.D. 6,080 ft.; I.P. 205 bbls. in 8 hrs.; ¼-in choke; T.P. 900 lbs.; C.P. 900 lbs.

Stanolind O. & G. Co. No. 1 Jimmie Sneed, Jimmie Sneed Sur. 10-in. csg. at 1,807 ft.; T.D. 1,840 ft.

Stanolind O. & G. Co. No. 4 B. L. Turney, A.C.H.&B. Sur. No. 1. T.D. 6,080 ft.; making electrical cg. test.

Stanolind O. & G. Co. No. 4 Williams, A.C.H.&B. Sur. No. 1. Drlg. sd. and sh. 1,153 ft.

Stanolind O. & G. Co. No. 4 Wooster, A. C.H.&B. Sur. No. 1. Drk.

Manvel—Brazoria County

Bowles & Barsodi No. 5 Norvell, Lot 45 sec. 23, H.&T.C. Sur. T.D. 5,725 ft.; I.P. 25 B.P.H.; 7/32-in. choke; T.P. 500 lbs.; C.P. 600 lbs.

Texas Co. No. 2-B Belcher, H. N. Little Sur. T.D. 5,150 ft.; 7-in. csg. 5,135 ft.

Texas Co. No. 21-B Belcher, H. N. Little Sur. Drlg. sh. and L. 4,607 ft.

Texas Co. No. 21 Houston Oil Field Assn., A.C.H.&B. Sur. No. 91. T.D. 4,105 ft.; P.B. to 3,955 ft.

Texas Co. No. 5 O. L. Rash, T. Sproggins Sur. Drlg. sh. 4,089 ft.

Turmax Oil Co. No. 3 F. Hart, H.T.&B. Sur. No. 24. T.D. 5,729 ft.; I.P. 29 B.P. H.; ¼-in. choke; T.P. 575 lbs.; C.P. 650 lbs.

Uscan Oil Co. No. 1 Wilson, H.T.&B. Sur. No. 23. T.D. 4,030 ft.; P.B. to 4,000 ft.; 7-in. csg. 4,015 ft.; to perf.

Anahuac—Chambers County

Humble O. & R. Co. No. 10 Clark, H.&T. C. Sur. Drlg. sd. 181 ft.

Humble O. & R. Co. No. 12 Engels, sec. 50, H.&T.C. Sur. Drlg. 1,300 ft.

Humble O. & R. Co. No. 2 Grippon, H.&T. C. Sur. Drlg. sh. 2,620 ft.

Humble O. & R. Co. No. 3 Grippon, H.& T.C. Sur. T.D. 7,241 ft.; 7-in. csg. at 7,042 ft.; I.P. 27 B.P.H.; ¼-in. choke; T.P. 950 lbs.; C.P. 1,050 lbs.

Humble O. & R. Co. No. 1 C. A. Lord, H.&T.C. Sur. T.D. 7,331 ft.; P.B. 7,067 ft.; 7-in. csg. at 7,046 ft.; I.P. 25 B.P. H.; ¼-in. choke; T.P. 1,000 lbs.; C.P. 1,100 lbs.

Humble O. & R. Co. No. 2 Marshall, H.& T.C. Sur. Drlg. sh. 2,706 ft.

Humble O. & R. Co. No. 6 Tyrell, H.&T.C. Sur., sec. 52. T.D. 7,085 ft.; 7-in. csg. at 7,040 ft.; testing.

Humble O. & R. Co. No. 2 Wilcox, sec. 56, H.&T.C. Sur. T.D. 7,093 ft.; I.P. 22 B.P.H.; ¼-in. choke; T.P. 1,350 lbs.

Humble O. & R. Co. No. 8 White, James McGahey Sur. T.D. 7,101 ft.; perf. lnr. from 7,086-99 ft.; I.P. 19 B.P.H.; ¼-in. choke; T.P. 500 lbs.

Humble O. & R. Co. No. 9 White, James McGahey Sur. T.D. 1,561 ft.; 10¾-in. csg. at 1,534 ft.

Sun Oil Co. No. 11 White, J. McGahey Sur. T.D. 7,084 ft.; 7-in. csg. at 7,036 ft.

Sun Oil Co. No. 12 White, James McGahey Sur. Cg. oil sd. at 7,000 ft.

Sun Oil Co. No. 13 White, James McGahey Sur. Bldg. drk.

Barbers Hill—Chambers County

Sinclair Prairie No. 19 Wilburn, Henry Griffith Sur. W.O.C. 5,266 ft.

Stanolind O. & G. Co.'s No. 29 Chambers Wm. Bloodgood Sur. Derrick.

Superior Oil Co. No. 2-B Barber, T.D. 5,-379 ft.; I.P. 5 B.P.H.; ¼-in. choke; T.P. 90 lbs.; C.P. 760 lbs.

Cotton Lake—Chambers County

Salt Dome Oil Co. No. 1 A. B. Lawrence, Solomon Barrow Sur. Drk.

Turtle Bay—Chambers County

Stanolind O. & G. Co. No. 2 Middleton, M. A. Carroll Sur. Drlg. sh. and sd. 5,538 ft.

Stanolind O. & G. Co.-State No. 1 Turtle Bay. T.D. 7,459 ft.; drlg. sh. and shells in sdtkd. hole at 5,456 ft.

Stanolind O. & G. Co. No. 2 State. Drk.

Big Creek—Fort Bend County

Gulf Oil Corp. No. 48 Davis, M. Young Sur. Drlg. sd. 4,292 ft.

Blue Ridge—Fort Bend County

Ben Barnett No. 1 Blakely, E. Drew Sur. T.D. 2,058 ft.; R.U. to pump.

Mills Bennett No. 4 Luscher, T. Habermacher Sur. Drlg. sh. 5,217 ft.

Trans State Oil Co. No. 3 Blakely, E. Drew Sur. Rig.

D. M. Wallace and Woodley Pet. Co. No. 2 Blakely, E. Drew Sur. T.D. 3,963 ft.; P.B. to 3,935 ft.; tested S.W.; P.B. to 2,993 ft.; to sidetrack.

Boling—Wharton County

Texas Co. No. 16-A Anne Taylor, S. F. Austin Sur. T.D. 3,484 ft.; 7-in. at 3,-430 ft.; drlg. plug; I.P. 150 B.P.D.

Orchard—Fort Bend County

Gulf Prod. Co. No. 44 Moore, Leo Burknapp Sur. Sh. and shells 5,925 ft.

Gulf Ref. Co. No. 45 Moore, German Immigration Sur. No. 8. Bd. 6,766 ft.; S.D.

Gulf Oil Corp. No. 4-A Moore, J. Frazer Sur. Drlg. rock 688 ft.

High Island—Galveston County

Stanolind O. & G. Co. No. 5 B.&N.O., Fitzsimmons Sur. T.D. 6,477 ft.; P.B. 5,795 ft.; 7-in. csg. at 5,755 ft.; P.B. to 5,735 ft.; set screen; washing.

Stanolind O. & G. Co. No. 54 Cade, W. Fitzsimmons Sur. T.D. 5,589 ft.; P.B. to 5,278 ft.; W.O.C.

Stanolind O. & G. Co. No. 55 Cade, Wm. Hudson Sur. Drlg. sd. and sh. 5,016 ft.

Stanolind O. & G. Co. No. 56 Cade, N. Fitzsimmons Sur. Drk.

Stanolind O. & G. Co. No. 1 Cooper, M. Denman Sur. Bldg. drk.

Stanolind Oil & Gas Co. No. 18-W Smith Royalty, M. Denman Sur. T.D. 5,739 ft.; P.B. to 5,675 ft.

Dickinson—Galveston County

Humble O. & R. Co. No. 2 Magie, J. S. Jones Sur. T.D. 3,040 ft.; rng. 7-in. csg.

Humble O. & R. Co. No. 3 E. E. Townes, J. S. Jones Sur. Bldg. foundations.

Humble O. & R. Co. No. 2-B Bayou Dev. Co., J. Sellers Sur. Drlg. sh. 5,943 ft.

Humble O. & R. Co. No. 7-A Stewart, J. Sellers Sur. Drlg. sh. 7,773 ft.

Ken Ben Oil Co. No. 1 Stewart, W. K. Wilson Sur. Drlg. sdy. sh. 1,040 ft.

Pure Oil Co. No. 3 Sholar, B.B.B.&C. Sur. T.D. 8,062 ft.; 7-in. csg. 8,025 ft.; swbd. fluid level at 3,000 ft.; 1,900 lbs. gas pressure; prep. to W.O.

Stanolind O. & G. Co. No. 4 State, Tr. No. 2, Rig.

Stanolind O. & G. Co. No. 5 State, Tract 2 T.D. 6,730 ft.; P.B. to 6,410 ft.; rmg. to run 9⅝-in. csg.

Batson—Hardin County

Nimrod Prod. Co. No. 1 Butler, W. Donoho Sur. S.D. 85 ft.

Saratoga—Hardin County

John Deering No. 1 Teel, Thomas Gaines Sur. Rig.

Pierce Junction—Harris County

Gulf Oil Corp. No. 3 Manchester, J. A. Williams Sur. Drlg. sdy. sh. 3,780 ft.

Harrison and Abercrombie No. 8 Ritter J. Hamilton Sur. T.D. 5,535 ft.; P.B. 3,800 ft.; drlg. sd. and sh. 4,180 ft.

Wright et al No. 4 Gulf Jones fee, J. A. Williams Sur. T.D. 3,335 ft.; I.P. 100 B. P.D.; T.P. 130 lbs.; C.P. 500 lbs.

Mykawa—Harris County

West Prod. Co. No. 9 Irwin, W. B. Walker Sur. Drlg. sdy. sh. 4,836 ft.

West Prod. Co. No. 1 Minnetex, Wm. Lovett Sur. R.U.

South Houston—Harris County

Dick Schwab No. 1 T. Bennett, H.T.&B. Sur. No. 6. Drlg. sd. and sh. 2,010 ft.

Smith & McDannald No. 1 R. R. Reynolds, H.T.&B. Sur. No. 6. T.D. 3,970 ft.; 7-in. csg. at 3,945 ft.

Stanolind O. & G. Co. No. 1 W. A. Griffin, H.T.&B. Sur. No. 6. Cellar.

Stanolind O. & G. Co. District No. 4, H. T.&B. Sur. T.D. 4,835 ft.; 7-in. csg. at 4,803 ft.; swbg.

Stanolind O. & G. Co. District No. 26, H. T.&B. Sur. Cg. sh. 4,433 ft.

Sterling O. & R. Co. No. 2 Summers, H. T.&B. Sur. No. 6. T.D. 4,805 ft.; 5-in. csg. at 4,800 ft.; W.O.C.

Tomball—Harris County

Humble O. & R. Co. No. 4 Gassett, B. Smith Sur. T.L. 5,562 ft.; 7-in. csg. at 5,545 ft.

Humble-Magnolia No. 12 J. D. Reid, C. Goodrich Sur. Drlg. sh. at 2,910 ft.

Humble O. & R. Co. No. 13 Reid, C. Goodrich Sur. T.D. 5,569 ft.; 7-in. csg. at 5,-563 ft.; I.P. 192 B.P.D.; T.P. 130 lbs.; C.P. 550 lbs.

Humble O. & R. Co. No. 1 Townsite area, J. House Sur. T.D. 5,591 ft.; 7-in. csg. at 5,586 ft.

Humble O. & R. Co. No. 1 West, Elisabeth Smith Sur. T.D. 5,560 ft.; 7-in. csg. on bottom; I.P. 173 B.P.D.; ½-in. choke.

Humble O. & R. Co. No. 7-A Quilter, Senchell Sur. Drlg. sh. 1,900 ft.

J. E. Mabee No. 4 Baker, J. House Sur. T.D. 5,577 ft.; prep. to test.

Maurits—Jackson County

Shell Pet. Corp. No. 2 C. F. Combs, Morris & Cummings Sur. Cg. sh. 4,900 ft.

Amelia—Jefferson County

Humble O. & R. Co. No. 2 Guinn, C. Williams Sur. Drlg. sh. 2,780 ft.

Humble O. & R. Co. No. 2 R. C. Miller, A. Savery Sur. T.D. sdtkd. hole 6,881 ft.; cutting and pulling stuck D.S.

Glenn McCarthy No. 2 Bessie Longe, H. Williams Sur. T.D. 5,581 ft.; blew out; caught fire; killed; now flowing 40,-000,000 to 50,000,000 ft. gas per day.

Big Hill—Jefferson County

Stanolind O. & G. Co. No. 2-A Pipkin and Davis, Wm. McFaddin Sur. Drlg. sh. 3,300 ft.

Fannett—Jefferson County

Blue Eagle Oil Co. No. 2 Junker, W. H. Smith Sur. S.D. 5,837 ft.

Gulf Oil Corp. No. 18 Thomas, W. H. Smith Sur. Drlg. hd. sd. 5,979 ft.

Cleveland—Liberty County

Gulf Oil Corp. No. 14-C Kirby, C. J. Pleasant Sur. T.D. 5,886 ft.

Esperson—Liberty County

Crown Pet. Co. No. 1 Davis, D. Kokernot Sur. Sh. 3,150 ft.; no report.

General Crude Oil Co. No. 14 Davis, D. Kokernot Sur. Derrick.

General Crude Oil Co. No. 15 Davis, D. L. Kokernot Sur. Drk.

General Crude Oil Co. No. 25 Esperson, Wm. Bloodgood Sur. Sh. 2,813 ft.; no report.

Hankamer—Liberty County

Gulf Oil Corp. No. 24 Boyd, Amos Allen Sur. Sh. 3,912 ft.

Gulf Oil Corp. No. 6 Crow and Jacobs, H.T.&C. Sur. No. 21. Drlg. sh. 5,181 ft.

Uscan Oil Co. No. 5 Ezzell, Levi Borrow Sur. Bldg. drk.

Hardin—Liberty County

Atlantic Oil & Prod. Co. et al No. 1 Hardy, James Robinson Sur. Tested S.W. 7,495-7,550 ft.; drlg. sh. 7,580 ft.

Van Vleck—Matagorda County

Skelly Oil Co. No. 1 Langham, M. Cummings Sur. Drlg. sh. 5,447 ft.

Skelly Oil Co. No. 1 Rugeley, L.&G.N. Sur. No. 267. Bldg. drk.

Skelly Oil Co. No. 6-B Kobb, M. Cummings Sur. R.U.

Markham—Matagorda County

Hamill & Hamill No. 4 Hudson, H. Parker Sur. Rig.

Conroe—Montgomery County

Humble O. & R. Co. No. 13 Dobbin, Ransom House Sur. 10¾-in. csg. at 1,339 ft.; drlg. sh. 3,254 ft.

Sun Oil Co. No. 15 Foster, C. B. Stewart Sur. T.D. 5,052 ft.; 7-in. csg. at 5,000 ft.; swbg.

Sun Oil Co. No. 26 Foster, 9⅝-in. csg. at 1,346 ft.

Orange—Orange County

Texas Canadian Oil Co. No. 1 Bland, James Dyson Sur. Rig.

Port Neches—Orange County

Texas Co. No. 6-B Polk, J. Beaumont Sur. T.D. 6,952 ft.; 7-in. csg. at 5,856 ft.; drilled plug; circulating and conditioning mud; P.B. to 5,721 ft.; set whipstock at 4,071 ft.; P.B. to 4,100 ft.; W. O.C.

Greta—Refugio County

Hewitt & Daugherty No. 23 Lambert, Hardwick Sur. Drlg. sh. 1,700 ft.

United Gas Co. No. 23 Lambert, Hardwick Sur. T.D. 5,852 ft.; testing.

Refugio—Refugio County

Sorey et al No. 1 Cable, Refugio townsite. T.D. 3,694 ft.; S.D.

United Gas Co. No. 17 Fox Hews Survey. T.D. 6,259 ft.; 5-in. csg. 6,248 ft.; W. O.C.

Tomeconnor—Refugio County

Quintana Pet. Corp. No. 34-A Tom O'Connor, Swisher Sur. Cg. 5,820 ft.

Coletto Creek—Victoria County

American Liberty Oil Co. No. 2 Laughlen, R. Manchola Sur. T.D. 2,861 ft.; 7-in. csg. at 2,849 ft.; I.P. 8 B.P.H.; T.P. 300 lbs.

Keeran—Victoria County

Gulf Oil Corp. No. 3 Keeran, DeLeon Sur. Cg. sd. 4,814 ft.

Placedo—Victoria County

Barnsdall Oil Co. No. 3 J. M. Pickering S.A.&M.G. Sur. No. 5. T.D. 4,772 ft.; top oil sd. at 4,757 ft.; I.P. 144 bbls. in 3 hrs.; ¼-in. choke; T.P. 3,200 lbs.

Barnsdall-Felmont No. 4 Pickering, A. Murray Sur. T.D. 4,773 ft.; rng. csg.

Barnsdall-Costa No. 3 Wheless, S.A.&M. G. Sur. No. 8. 10-in. csg. at 856 ft.

Benson-Jones No. 1 J. A. Janis, W. Rupley Sur. 12½-in. csg. at 464 ft.

Crown Central Pet. Co. No. 1 F. Gebrever, S.A.&M.G. Sur. No. 8. T.D. 4,782 ft.; 7-in. csg. at 4,765 ft.; I.P. 105 bbls. in 12 hrs.; T.P. 380 lbs.; C.P. 750 lbs.

Crown Central Oil Co. No. 2 Gebrover, J. M. Bronson Sur. Rig.

Eastern Texas Pet. Co. No. 1 J. Hasek, S.A.&M.G. Sur. T.D. 4,773 ft.; to make D.S.T.

Harrison & Abrocrombie No. 1 C. O. Voss, J. M. Bronson Sur. T.D. 6,441 ft.; P.B. to 4,475 ft.; 7-in. csg. at 4,749 ft.; W. O.C.

Sun Oil Co. No. 4 Marek, J. M. Bronson Sur. T.D. 4,776 ft.; 7-in. csg. at 4,754 ft.; I.P. 350 B.P.D.; T.P. 540 lbs.; C.P. 420 lbs.

Sun Oil Co. No. 2 Schneeder, Wm. Rupley Sur. Rig.

Clay Creek—Washington County

Sun Oil Co. No. 3 Freeman, J. F. Perry Sur. T.D. 1,356 ft.; 7-in. csg. at 1,325 ft.; I.P. 51 B.P.D.; flowing by heads.

Sun Oil Co. No. 1 H. Lauter, N. Clay Sur. Drlg. sh. 2,624 ft.

Louise—Wharton County

Pure Oil Co. No. 3 Lancaster, M.&C. Sur., sec. 23. T.D. 5,154 ft.; 7-in. csg. at 5,-122 ft.; I.P. 176 B.P.D.; ¼-in. choke; T.P. 214 lbs.; C.P. 120 lbs.

Pure Oil Co. No. 1 Rivera, sec. 19. T.D. 5,158 ft.; 7-in. csg. on bottom; rng. screen and lnr. to test.

Pickett Ridge—Wharton County

Texas Co. No. 2 Marek, George Reynolds Sur. Drk.

Texas Co. No. 14-A Pierce, I.&G.N. Sur. No. 39. Drlg. sh. and L. 3,093 ft.

Texas Co. No. 17-A Pierce, I.&G.N. Sur. T.D. 1,327 ft.; 10-in. csg. at 1,317 ft.

Texas Co. No. 18-A Pierce, I.&G.N. Sur. T.D. 1,327 ft.; 10-in. csg. at 1,325 ft.

Withers—Wharton County

Texas Co. No. 1-B Pierce, E.T. R.R. Sur., Abst. No. 108. Drlg. sh. and L. 4,287 ft.

Texas Co. No. 4-C Pierce, J. Caldwell Sur. Drlg. sh. and L. 4,186 ft.

Texas Co. No. 5-C Pierce, C. J. Caldwell Sur. Drlg. sh. and L. 1,750 ft.

GULF COAST WILDCATS

Brazoria County

Gulf Oil Corp. No. 1 Fairfield, A. Robinson Sur. Cg. sdy. sh. 7,422 ft.

Strake Oil Corp. et al No. 1 D. K. Poole, J. W. Hardin Sur. Cg. sd. 6,731 ft.

Texas Gulf Prod. Co. No. 1 Sparks. T.D. 3,937 ft.; prep. to run elec. cg. test.

Chambers County

Glenn H. McCarthy No. 1 Pitt, J. M. Duran Sur. Fsg. 4,177 ft.

Salt Dome Oil Co. No. 2 Lawrence, Solomon Borrow, 10¾-in. csg. 1,415 ft.; T.D. 6,661 ft.; flowed 197 bbls. in 21 hrs.; ¼-in. choke; T.P. 425 lbs.

Calhoun County

Continental Oil Co. No. 2-A American Realty Co., Pedro Garcia Sur., Lot 1, Blk "C," T.D. 9,083 ft.; recovered 300 ft. of gas cut mud on D.S.T. 8,926-70 ft.; prep. to make D.S.T. at 6,401 ft.

Crown Central Pet. Co. No. 1 M. C. Driscoll Benito Morales Sur. Abd. 7,027 ft.

Humble O. & R. Co. No. 2 Weider, Jose Maria Rios Sur. No. 1. Drlg. sd. and clay 325 ft.

Colorado County

G. W. Johnson No. 1 Drymalle, T. Colsman Sur. Abd. 5,454 ft.

Sterling Oil & Roy. Co. No. 2-B Powell, I.&G.N. Sur., sec. 45. T.D. 5,930 ft.; flowing at rate of ½ bbl. of fluid per hr., 90% S.W.; T.P. 1,400 lbs.; C.P. 1,-000 lbs.

Fayette County

Ben G. Barnett No. 1 McKinnon, A. Zumwalt Sur. Drlg sh. 850 ft.

Galveston County

Coastal Mineral Dev. Co. No. 1 Joslin, Sarah McKissick Sur. 10¾-in. csg. 1,-410 ft.; drlg. sh. 3,150 ft.

Sun Oil Co. No. J. D. Hughes, W. M. C. Baker Sur. T.D. 8,613 ft.; shooting from 8,394-74 ft.

Grimes County

Crook Bros. No. 1 W. W. and J. C. Greir. S.D. 268 ft.

Hardin County

Jack Frazier No. 1-A Olive Sternberg, J. Houston Sur. Spudded.

S. Hindman No. 1 Howth, A. J. Cotton Sur. 10¾-in. csg. at 750 ft.

David B. MacDaniel No. 1 Nona Mills, E. E. Manvel Sur. 10¾-in. csg. at 1,381 ft.; W.O.C.

Harris County

Amerada Pet. Corp. et al No. 1 Dopaloui W.C.R.R. Sur, Blk. 1, sec. 2. 20-in. csg. at 64 ft.; W.O.C.

Amerada Pet. Corp. No. 1 Nellie Esperson, George Patrick Sur. Drlg. sd. 4,-361 ft.

Bunte O. & G. Co. No. 1 Lobit et al, Benjamin Barrow Sur. Drk.

Jefferson County

Magnolia Pet. Co. No. 1 Funches, sec. 16, H.T.&B. Sur. Drlg. sh. 5,700 ft.

Sun Oil Co. No. 1 Herbert & Broussard, B. Blackman Sur., Abst. No. 2. T.D. 4,-824 ft.; fsg. 7,410 ft.

Smith and McDannald No. 1 Grennell, Blk. 3, H.&T.C. Sur. Abd. 8,334 ft.

Matagorda County

Continental Oil Co. No. 1 Feife, J. S. Criswell Sur. T.D. 7,629 ft.; P.B. to 6,934 ft.; prep. to W.O.

John Deering No. 1 Estelle, Tone and Jameson Sur. S.D. 6,788 ft.

Helmerich & Payne, No. 1 Hawkins, D. McCarthy Sur. T.D. 7,816 ft.; P.B. 7,-318 ft.; cutg. and pig. 5-in. csg. 6,350 ft.

Sun Oil Co. No. 1 Craig, Thomas Williams Sur. T.D. 5,999 ft.; cmtd. back from 5,-405-5,231 ft.; drlg. sh. 5,475 ft.

Montgomery County

Chapman and Smith No. 1 Delta Land & Timber Co., T. Shepperd Sur. No. A-488. S.D. 4,012 ft.

Mid-Texas Oil Co. No. 1 Security Trust, G. W. Loonin Sur. R.U.

Wm. Thompson et al No. 2 Scott, F. A. Wheeler Sur. Drlg. sh. 1,950 ft.

Polk County

J. P. Lightfoot et al No. 1 Lynch Davidson, Houston County School Land Sur. Abst. No. 270. S.D. 3,135 ft.

Victoria County

Rowan-Hope No. 1 Scheel, J. M. Escallera Sur. Drlg. sh. 3,175 ft.

Wharton County

Pure Oil Co. No. 1 Paige, James Pirie Sur. T.D. 9,200 ft.; rmg. at 8,361 ft.

Sterling O. & R. Co. No. 1 Agnes Genger, J. Scott Sur. Cmtd. sur. csg. 730 ft.; S.D.

S. W. TEXAS WILDCATS

Aransas County

Buckingham Oil Co. No. 1 McCampbell, sec. 41-42, James Arida Sur. T.D. 6,144 ft.; oil flow through D.S. mudded off; W.O. heavy rig.

Atascosa County

Atascosa Trust No. 1 Domsch, 160 ft. S line, 300 ft. E line, 152-ac. lease, J. T. Russell Sur. 1,222. Drlg. 3,390 ft.

Bastrop County

Marts & Beavens No. 4 Riddle, 860 ft. W line, 600 ft. S line tr., Maxmillian Sur. R.U. pump; T.D. 2,272 ft.

Bee County

Marine Oil Co. No. 1 Hearn, 2,000 ft. E No. 1 Words, E. Ryan Sur. T.D. 5,915 ft.; reworking.

Marine Oil Co. No. 1 Ray, 360 ft. E line, 330 ft. N line, 40-ac. tr., Anna Birks Sur. Cg. 2,747 ft.

H. A. Pressey No. 1 Hicks, 1,450 ft. of S line, 150 ft. of W line, lease, J. Uranga grant. S.D. 2,630 ft.

Brooks County

California Co. No. 1 B. Garcia, 465 ft. N and W lines lease B Garcia tract, Salinas Sur. Cg. 5,530 ft.

Burleson County

Walter Blumenthal No. 1 Crane, W. C. Pierce Sur. No. 297. T.D. 6,328 ft.; P.B. 6,320 ft.; stdg.

Caldwell County

Sterling & Wilson No. 1 Strawn, P. Martinez Sur. Abd.

Dewitt County

Universal Oil, Gas & Mining Co. No. 1 Schnebel, 330 ft. S and W lines tr., Fitzgerald Sur. Testing 1,187 ft.

Duval County

C. G. Glasscock No. 1 Milano Land & Garden Co., Sur. 87. Drlg. 2,129 ft.

Frank Gravis No. 1 C. K. Gravis, 1,650 ft SE line, 990 ft. SW line, Sur. 250. Cg. 4,543 ft.

Hamil & Smith No. 1 Hubbard, sec. 69. Drlg. 1,813 ft.

Kepley Prod. Co. No. 1 Sevier, 330 ft. S line, 1,320 ft E line, Sur. 71. Cd. sd. 3,166-72 ft.; cg. 3,174 ft.

Magnolia Pet. Co. No. 1 Gray ranch, 330 ft. S and E lines, Sur. 556 Cg. 2,451 ft.

Cabildo Oil Corp. No. 1 Tinney, Sur. 8. Drlg. 2,311 ft.

Stanolind O. & G. Co. No. 3 Farmers Life Ins. Co., 330 ft. S and E lines, Sur. 559. Drlg. 2,974 ft.

Edwards County

Paul Texas No. 1 Stewart, C SE¼ sec. 1 G.C.&S.F. Sur. Drlg. sh. 5,026 ft.

Goliad County

Cotton Belt O. & G. Co. No. 1 Lutenbacher, 330 ft. S and W lines, Blk. 25 Goliad townsite. Sd. 5,544-45 ft.; blew out and bridged; stdg.

Magnolia Pet. Co. No. 1 Tipton, 330 ft. SE and SW lines, Thorman Sur. Drlg. 3,429 ft.

Gonzales County

Tull et al No. 1 Boska, 800 ft. S and E lines tr., McClure Sur. No report.

Guadalupe County

Paul Armstrong and J. E. Clark No. 1 Brodnaux, 150 ft. SE cor. 36-ac. tr., King Sur. Drlg. 2,380 ft.

J. E. Clark No. 1 Anderson, Green De Witte Sur. R.U.

J. E. Clark No. 1 Williams, DeWitte Sur. Drlg. 1,021 ft.

Hidalgo County

Gerald O. & G. Co. No. 1 Nelson Mortgage Co., Blk. 38, Lot A, LaDonna Tr. Drlg. 1,514 ft.

Gulf States Oil Co. No. 3 John Engleman, Lot 2, Blk. 70. Drlg. sh. 4,011 ft.

Maxwell-Mundy No. 1 Hid. Wtr. Dist. No. 2, Lot 11, Blk. 20, Alamo Tr. Sd. 652-60 ft.; stdg.

Quintana Petroleum Co. No. 1 John C. Engleman, Lot 10, Blk. 94, Las Mestanas grant. Cg. sh. 7,522 ft.

Dayle Smith No. 1 Fairbanks & Young, Blk. 44, Por. 46, jurisdiction of Reynosa. T.D. 1,640 ft.; stdg.

Jim Hogg County

French Oil Co. No. 2 Rodrigues, Sh. 3, Sur. 579, El Reyoto grant. Set sur. csg.; W.O.C.

S. L. Miller No. 2 Yeager, 777 ft. S line, 150 ft. E line, Blk. 6, Sur. 20. Drlg. 2,-120 ft.

Jim Wells County

O. W. Killam No. 1 Reynolds, C S half Sur. 28. D.&A. 5,550 ft.

Gist & Graddy No. 1 Owens, 660 ft. N line, midway E and W lines, Sur. 151. Spudded.

G. M. Richardson No. 1 Garrett, 1,980 ft. S line, 1,640 ft. E line, sec. 5. Drlg. 5,810 ft.

Texon Roy. Co. and Lucey No. 1 Rolston, 330 ft. N and W lines, sec. 17, King Farm Lots. Drlg. 5,895 ft.

Karnes County

DeGraffe & Reele No. 1 Cochran, 460 ft. E line, 160 ft. S line, McConnell League. Spudded in.

Kerr County

Eastland Oil Co. No. 7 Love, 660 ft. N Evans & Gant No. 1 Love, Martinez Survey No. 1,594. Cmtng. off cavity; T.D. 1,-850 ft.

LaSalle County

Davenport & Talbott No. 1 Watkins, 1,-610 ft. S line, 330 ft. E line, Sur. 103. Drlg. 2,357 ft.

Paul Meader No. 1 Reed, sec. 136. Drlg. 1,627 ft.

Live Oak County

W. A. Brooks No. 1 Terrill, 1,000 ft. NE R.R., 1,500 ft. S line lse., Juan Houligan Sur. Drlg. 623 ft.

Dirks Bros. et al No. 1 Agnes Troell, 330 ft. SE and SW lines, 418-ac. tr., Thos. Fen Sur. M.I.M.

R. H. Feltner No. 1 J. T. Carter, 1,847 ft NW line, 350 ft. NE line, 120-ac. tract. sec. 319. Fsg. 3,466 ft.

Inter-Allied Pet. Co. No. 1 Aetna Life Ins. Co., 660 ft. NW and SW lines, Pointevent Sur. 3, Abst. 356. M.I.M.

McMullen County

R. J. Hill No. 1 Richardson, Sur. 158. Set sur. csg.; no report.

Magnolia Pet. Co. No. 2 Kincaid, 330 ft. S and E lines, Sur. 36. Sd. 1,810-22 ft.; tested gas; drlg. 2,552 ft.

Rainer Oil Co. No. 1 Hagist, 330 ft. S and W lines, SW¼, SE¼, Sur. 25. Loc.

Reliance Oil & Roy. Co. No. 2 Shiner, 160 ft. N and E lines, NE¼, sec. 40. D.&A. 2,202 ft.

V. G. Schimmell No. 3 Two Rivers ranch, 330 ft. S and W lines, Sur. 58. Drlg. 311 ft.

Nueces County

A. D. Cargray No. 2 Baldwin, 330 ft. N line, 550 ft. E line, Blk. 21, sec. 51. T.D. 5,006 ft.; D.&A.

O. W. Killam No. 1 Carter, 330 ft. N and W lines, Carter tr., Wright Subd. Drlg. 2,932 ft.

O. W. Killam No. 1 Ellick, 330 ft. N and E lines tr., sec. 109, Paul Subd. M.I.M.

La Jita Oil Corp. No. 2 King, 660 ft. N and W lines, sec. 24. Drlg. 4,927 ft.

Oil Terminal Prod. Co. No. 1 Thurman, 660 ft. N and W lines, SW¼, sec. 10. Loc.

G. M. Richardson No. 1 Gerhardt, 660 ft. E line, 330 ft. N line, sec. 79. Drk.

Santa Clara Oil Co. (Atkins & O'Neil) No. 1 Cooke, 990 ft. N line, 330 ft. W line, sec. 14. Drlg. 5,404 ft.

San Patricio County

Benedum & Trees Oil Co. No. 1 Jones, 1,650 ft. E line, 990 ft. S line, NW¼ sec. 65. Drlg. sd. 5,068 ft.

Benedum & Trees Oil Co. No. 2 Welder sec. 19. T.D. 6,116 ft.; sd. good odor; prep. to run Schlumberger.

Potrero Oil Co. No. 1 Welder, 2,000 ft. N and W lines, sec. 37. Drlg. 4,521 ft.

Santa Clara Oil Co. (Atkins & O'Neil) No. 4 Welder, 2,300 ft. SE line, 1,791 ft. NE line, 1,250-ac. tract, Villareal Sur. T.D. 6,004 ft.; D.&A.

Willis Storm No. 1 Nancy Hobbs, 622 ft. NW and SW lines, 30-ac. tr. Drlg. 5,-817 ft.

Texon Drlg. Co. No. 1 Rambo, 330 ft. W line, 466 ft. N line, Lot 6, sec. 35. Drlg. 2,563 ft.

Starr County

J. F. Anderson No. 1 Yzagierre, Tr. 1, Porc. 79, J. of Camargo. Drlg. sh. 224 ft.

Coreta Oil Co. No. 1 Haden, Share 47, Porc. 80. T.D. 2,300 ft.; D.&A.

Coreta Oil Co. No. 1 Pena, 150 ft. S and E lines, Sh. 80, Porc. 81. R.U.

H. L. Curry No. 1 Ysidro, 30-ac. tr., Sh. 7-B, Porc. 70. Cg. 395 ft.

Kingwood Oil Co. No. 1 Guerra & Son, 330 ft. NE line, 405 ft. SE line, Blk. 35, Porc. 56. Drlg. 122 ft.

Webb County

Austin & Vernon's No. 1 Jeffries, 150 ft NE line, 1,170 ft. SE line, Blk. 13, Sur. 1,453. Drlg. 1,425 ft.

Mills Bennett Prod. Co. No. 1 Moglia, Sur. 723. T.D. 2,675 ft.; D.&A.

Willacy County

Shell Pet. Corp. No. 1 Yturria Land & Cattle Co., 990 ft. S and E lines, Share 64, San Juan de Carricitos grant. W.O. C. 2,431 ft.

Zapata County

Ivan Howard No. 1 Martinez, 4,950 ft. SW line, 330 ft. NW line, Blk. 5, Sur. 206. Drlg. 2,217 ft.

Oklahoma Co. No. 1 Sanchez, Sh. 9, Blk. 37, Sanchez ranch. Set sur. csg.; W.O.C.

O. J. Perren No. 1 Uribe, 330 ft. NE line, 227 ft. SE line, Blk. 31, Borrego grant. R.U.

Zavalla County

Bay Oil Co. No. 1 Calliant, sec. 43, A. B.&M. Sur. Spudded in.

W. L. Bridges No. 1 Price & Flowers, 1,-320 ft. N and W lines, Blk. 1, sec. 19. Set sur. csg. 360 ft.; stdg.

Frank Buttram No. 1 Whitecotton, 2,400 ft. N line, 300 ft. W line, A.B.&M. Sur. Drlg. 2,623 ft.

Leona Oil Co. and Witherspoon Oil Co. No. 1 West, 330 ft. E line, midway N and S lines, sec. 1, Bustillo Sur. Drlg. 4,032 ft.

S. W. TEXAS PROVEN

Caesar—Bee County

Sun Oil Co. No. 2 Borrown, 310 ft. E line, 1,500 ft. N line tr., G. Baker Sur. Drlg. 1,650 ft.

Dirks—Bee County

Dirks Bros. & McMurray No. 1 Harris, 200 ft. N line, 330 ft. W line, 61.9-ac. tr., Dugat Sur. Drlg. 2,413 ft.

Illinois Pet. Co. No. 12-B Hall, Butler Sur. M.I.M.

Texas Co. No. 15 Young, Butler Sur. Sd. 3,901-29 ft.; comp.; no gauge.

Ray—Bee County

California Co. No. 1 Boothe, 330 ft. S and E lines, 160-ac. tr., Walker Sur. T.D. 4,152 ft.; D.&A.

Magnolia Pet. Co. No. 1 Booth, W. B. Blanchard Sur. T.D. 4,220 ft.; D.&A.

Hagist—Duval County

Marzo Oil Co. No. 3 Hagist, 660 ft. SW of No. 1, Sur. 6. Drlg. 1,180 ft.

Hoffman—Duval County

W. D. Maston No. 1 Ruiz, Sur. 128. Set sur. csg.; W.O.C.

Plymouth Oil Co. No. 2 Cuellar, 330 ft. NW and NE lines tr., Sur. 117. T.D. 2,-885 ft.; flowing oil and S.W.

Standard Oil Co. of Kans. No. 2 Hoffman, 80-ac. tr., Sur. 118. Drlg. 2,457 ft.

Loma Novia—Duval County

Bridwell Oil Co. No. 16 B.C.C., 660 ft. N of No. 15, 120-ac. tr., Sur. 76. Swbg. 2,660 ft.

Bridwell Oil Co. No. 15-C Hubbard, 330 ft. S and W lines tr., Sur. 75. Drlg. 2,553 ft.

Duval Oil Corp. No. 19 B.C.C., 660 ft. N of No. 17, Sur. 59. Comp.; 15 B.P.H.; sd. 2,531-46 ft.

Duval Oil Corp. No. 20 B.C.C., 660 ft. W of No. 18, Sur. 59. Comp.; 150 B.P.D.; T.D. 2,542 ft.

Duval Oil Co. No. 21 B.C.C., 660 ft. W of No. 17, 660 ft. S of No. 18, Sur. 59. Drlg. 1,021 ft.

Duval Oil Corp. No. 22 B.C.C., 660 ft. W of No. 21, 660 ft. S of No. 20, Sur. 59. Cg. 2,510 ft.

Frank Gravis No. 4 Flodin, Sur. 78. M.I.M.

Highland Oil Co. No. 7 Hubbard, 330 ft. S and W lines, SE¼, Sur. 75. Comp.; 35 B.P.H.; T.D. 2,553 ft.

Highland Oil Co. No. 8 Hubbard, E½, Sur. 73. Cg. 2,510 ft.

Highland Oil Co. No. 9 Hubbard, SE¼, Sur. 75. Comp.; 30 B.P.H.; T.D. 2,737 ft.

Highland Oil Co. No. 21 Hubbard, E½, Sur. 73. Loc.

Humble O. & R. Co. No. 10-A Hubbard, Sur. 84. T.D. 2,558 ft.; W.O. pump.

Humble O. & R. Co. No. 11-A Hubbard, N½, Sur. 85. Drlg. sh. 2,260 ft.

Humble O. & R. Co. No. 5-B Hubbard, Sur. 83. T.D. 2,801 ft.; comp.; no gauge.

Humble O. & R. Co. No. 37-B Hubbard, E½, Sur. 72. T.D. 2,714 ft.; run lnr. and screen.

Humble O. & R. Co. No. 61-B Hubbard, W½, Sur. 83. M.I. rig.

Humble O. & R. Co. No. 8-C Welder, Sur. 554. T.D. 2,718 ft.; comp.; 9 B.P.H. on ½-in. choke.

Humble O. & R. Co. No. 11 Vela, N½, Sur. 42. Drlg. sh. 1,398 ft.

Kaffie Lbr. Co. No. 1 Davidson, Sur. 114. S.D. 1,700 ft.

Magnolia Pet. Co. No. 26 Hahl, Sur. 67. Comp.; 18 B.P.H.; ½-in. choke; T.D. 2,645 ft.

Magnolia Pet. Co. No. 28 Hahl, Sur. 67. Sd. 2,596-2,612 ft.; set csg.; W.O.C.

Magnolia Pet. Co. No. 29 Hahl, Sur. 67. M.I.M.

Hiram Reed and J. T. Stover No. 1 C. W. Duke, 330 ft. N and E lines, SE¼ SE¼ Sur. 64. T.D. 2,703 ft.; D.&A.

Reynosa Oil Co. No. 1 Hubbard, Sur. 75. Sd. 2,549-72 ft.; comp.; 10 B.P.H.

Reynosa Oil Co. No. 2 Hubbard, S½, SW¼, Sur. 75. Drlg. 2,021 ft.

Rosan Texla Oil Co. No. 13 Hubbard, 310 ft. W line, 330 ft. N line, S½, Sur. 84. Cg. 2,707 ft.

Shell Pet. Corp. No. 3 Mendoza, 704 ft. N of No. 2, 330 ft. W line, Sur. 68. T.D. 2,777 ft.; comp. 16 B.P.H.

Shell Pet. Corp. No. 4 Mendoza, 2,442 ft. S line, 330 ft. W line, Sur. 68. Set csg. 2,753 ft.; W.O.C.

Shell Pet. Corp. No. 5 Mendoza, Sur. 68. Drk.

Sun Oil Co. No. 3 Hubbard, Sur. 84. Rng. lnr. and tbg. 2,816 ft.

Sun Oil Co. No. 4 Hubbard, 990 ft. N line, 330 ft. W line, 336-ac. tr., sec. 83. Loc.

Texas Co. No. 12 B.C.C., 990 ft. E line, 330 ft. S line, N½ sec. 59. Sd. 2,534-45 ft.; comp.; 14 B.P.H.

Texas Co. No. 30 Wendt, Sur. 68. Testing 2,712 ft.

Texas Co. No. 32 Wendt, Sur. 68. Comp.; 5 B.P.H.; T.D. 2,750 ft.

Texas Co. No. 34 Wendt, Sur. 68. Drlg. 510 ft.

Texas Co. No. 35 Wendt, Sur. 68. T.D. 2,688 ft.; comp.; 10 B.P.H.

Loma Vista—Duval County

Shell Pet. Corp. No. 1-A Welder, 330 ft. N line, 900 ft. W line lse., Sur. 103. Loc.

Piedra Lumbre—Duval County

Humble O. & R. Co. No. 1-B D.C.R.C., 330 ft. N and W lines, N½, NE¼, Sur. 95. Set csg. 71 ft.; W.O.C.

Magnolia Pet. Co. No. 2 D.C.R.C., NW¼, Sur. 95. Set csg. 1,962 ft.; W.O.C.

Texas Co. No. 16 D.C.R.C., SW¼, Sur. 100. Drlg. 1,397 ft.

Seven Sisters—Duval County

Atlantic Oil Prod. Co. No. 2-E Welder, S½, SW¼, Sur. 381. T.D. 3,162 ft.; D. &A.

Atlantic Oil Prod. Co. No. 7-C Welder, 990 ft. N and W lines, Sur. 591. Drlg. 2,413 ft.

Atlantic Oil Prod. Co. No. 5-D Welder, 330 ft. S and E lines, Sur. 113. Cg. 2,-485 ft.

Atlantic Oil Prod. Co. No. 8-D Welder, 2,310 ft. E line, 330 ft. N line, Sur. 113. Comp.; 13 B.P.H. on ¼-in. choke; sd. 2,462-73 ft.

Atlantic Oil Prod. Co. No. 9-D Welder, 2,970 ft. E line, 330 ft. N line, Sur. 113. R.U.

Buchanan & Blanco Oil Co. No. 1-B Welder, 330 ft. N and W lines tr., Sur. 591. Cg. 2,498 ft.

Buchanan & Blanco Oil Co. No. 2-B Welder, 330 ft. S and W lines, S½, NW¼, Sur. 591. Drlg. 1,820 ft.

Buchanan & Blanco Oil Co. No. 3-B Welder, 990 ft. W line, 330 ft. N line, S½, NW¼, Sur. 591 Loc.

S. B. Cloyes No. 1 Serna, 330 ft. N and E lines tr., Sur. 384. Loc.

Dulce Oil Co. and Henderson & Harvey No. 1-B Serna, Sur. 384. Sd. 2,187-2,208 ft.; comp.; 17 B.P.H.

Humble O. & R. Co. No. 3 Badgley, Sur. 307. T.D. 2,537 ft.; swbg. in.

Humble O. & R. Co. No. 10-A Serna, SW¼, Sur. 384. Sd. 2,464-68 ft.; comp.; 39 B.P.H. on ½-in. choke.

Humble O. & R. Co. No. 11-A Serna, Sur. 384. Drlg. 1,723 ft.

Humble O. & R. Co. No. 7-B Serna, SE¼, Sur. 384. M.I.M.

Humble O. & R. Co. No. 14-B Serna, SE¼, Sur. 384. Sd. 2,191-99 ft.; tested mud; T.D. 2,200 ft.

Humble O. & R. Co. No. 8 T. D. Smith, Sur. 382. T.D. oil sd. 2,467 ft.; comp.; 1,191 B.P.D. on ¼-in. choke.

Humble O. & R. Co. No. 9 Smith, Sur. 382. Drlg. sh. 1,573 ft.

Humble O. & R. Co. No. 3 Wright, 330 ft. S and W lines, SW¼, Sur. 118. Loc.

Mid-Continent Pet. Corp. No. 7 Serna, S½ N½, Sur. 384. Sd. 2,200-08 ft.; comp.; 225 B.P.D.

Navarro Oil Co. No. 1 Welder, 330 ft. E line, 2,970 ft. N line, Sur. 383. T.D. 2,-461 ft.; testing.

Navarro Oil Co. No. 2 Welder, 330 ft. S and E lines tr., Sur. 383. Sd. 2,440-62 ft.; set csg.: W.O.C.

Parr Oil Co. No. 2 Welder, 990 ft. W line, 330 ft. N line, 30-ac. tr., Sur. 382. Sd. 2,432-46 ft.; W.O.C.

Reliance & Kleiner No. 3 Welder, 2,332 ft. E line, 330 ft. S line, S½, NE¼, Sur. 381. T.D. 2,419 ft.; comp.; 21 B.P.H.

Reliance Oil & Royalty Co. No. 4 Welder, S½, NE¼, Sur. 381. T.D. 2,421 ft.; comp.; 10,000,000 ft. gas per day.

Reliance & Kleiner No. 5 Welder, 1,648 ft. N line, 1,622 ft. E line, Sur. 381. Drlg. 614 ft.

Reliance Oil Co. No. 1-A Telford, 150 ft. N and W lines, NE 40-ac. tr., NW¼, Sur. 385. T.D. 2,212 ft.; comp.; est. 25 B.P.H.

Reliance Oil & Royalty Co. No. 2-A Telford, Sur. 386. Drlg. 524 ft.

Santa Clara Oil Co. (Atkins & O'Neil) No. 30 Welder, 330 ft. S line, 990 ft. E line tr., Sur. 383. Sd. 2,442-72 ft.; comp.; 37½ B.P.H.

Santa Clara Oil Co. (Atkins & O'Neil) No. 31 Welder, NE 160-ac. tr., Sur. 383. Spudded in.

Santa Clara Oil Co. No. 5-B Welder, SE cor. tr., Sur. 383, D S.T. 1,400 ft. oil; 8 min.; rng. csg.

Santa Clara Oil Co. and H. H. Henderson No. 2-C Welder, Sur. 381. Drlg. plugs on sd.

Shell Pet. Corp. No. 6-A Welder, W½, SW¼, Sur. 385. T.D. sd. 2,478 ft.; W. O.C.

Westheimer & Daube No. 7 Campos, 330 ft. W line, 2,970 ft. S line, Sur. 224. Sd. 2,203-21 ft.; comp.; 17 B.P.H.

Westheimer & Daube No. 8 Campos, Sur. 224. R.U.

Pearsall—Frio County

Amerada Pet. Corp. No. 1 Correy & McWilliams, 660 ft. N line, 721 ft. W line, Tr. 17, Manuel Tijerina Sur. No. 300. T.D. 5,676 ft.; swbg.; shut in.

Amerada Pet. Corp. No. 1 Correy & McWilliams, 1,980 ft. S line, 746 ft. W line, Tr. 3, Jose Arocha Sur. No. 299. T.D. 5,575 ft.; comp.; 348 B.P.D. on ¼-in. choke; shut in.

Amerada Pet. Corp. No. 1 Correy & McWilliams, 660 ft. S line, 728 ft. E line, Tr. 6, Jose Arocha Sur. 298. Set csg. 5,457 ft.; W.O.C.

Amerada Pet. Corp. No. 7 Halff & Oppenheimer, 1,320 ft. W line, 330 ft. S line, J. H. Gibson Sur. No. 16. Set csg. 3,-917 ft.; W.O. std. tools.

Amerada Pet. Corp. No. 1 Kothman, 500 ft. N and W lines, B. L. Crouch Sur. No. 90/6. T.D. 5,407 ft.; comp.; 70 B. P.D. on ¾-in. choke.

Amerada Pet. Corp. No. 2 Smith, 466 ft. E line, 2,771 ft. N line tr., J. V. Mason Sur. M.I.M.

Combs & Oakes No. 1 Arp, 330 ft. S and E lines, 102-ac. tr., S. Blair Sur. 297. Drk.

T. Davis No. 1 Halff & Oppenheimer, 329-ac. tr., J. D. Clare Sur. 366½. T.D. 5,-433 ft.; comp.; 110 B.P.D.

Gillette—Goliad County

Magnolia Pet. Co. No. 6 Scarborough, 600 ft. S of No. 4, Talley Sur. Testing 3,-648 ft.; broke off pipe; W.O. orders.

Zobrowlski-Guadalupe County

W. J. Walton No. 6 Zobrowlski, 1,000 ft. SE of No. 3, Clements Sur. Set csg. 2,-160 ft.; T.D. 2,246 ft.; comp.; est. 35 B.P.D.

Clark—Guadalupe County

Eickenroht & Gallagher No. 1 Johns, 130 ft. E line, 450 ft. N line, 840-ac. tr., DeWitt Sur. 13. Cg. 2,580 ft.

Ramona Oil Co. No. 1 Katie Say, 150 ft. W line, Davis Sur., 150 ft. S line lease. T.D. 2,407 ft.; comp.; 12 B.P.H.

Mercedes—Hidalgo County

Union Sulphur Co. No. 7 American Rio Grande L. & I. Co., 4,000 ft. SE of No. 1, Farm, Tr. 2,309, Blk. 59. Perf. 7,546-49 ft.; swbg.; no show; W.O. orders.

Union Sulphur Co. No. 8 American Rio Grande L. & I. Co., 660 ft. N & E lines, Tr. 2,120, Blk. 87. Drlg. plugs 7,350 ft.

Union Sulphur Co. No. 9 American Rio Grande L. & I. Co., Farm Tr. 2,275, Blk. 59. Drlg. sh. and L. 4,065 ft.

Samfordyce—Hidalgo County

James H. Anderson No. 3 Guerra, Tr. 254, Porc. 40. Sd. 2,733-43 ft.; comp.; 40 B.P.D. on ½-in. choke.

J. H. Anderson No. 4 Guerra, Tr. 254, Porc. 40. Drlg. 1,412 ft.

J. T. Barlow No. 1 Marta Flores de Chapa, 230 ft. W line, 692 ft. S line, Tr. 250, Porc. 39. Sd. 2,951.5-55 ft.; recompleting on small choke.

Dean Bros. No. 1 Lula George, 150 ft. S line, 230 ft. W line, 10-ac. tract, Tract 13, Porc. 40. Cg. 2,697 ft.

Henshaw Bros. No. 1 Seabury, Tr. 256, Porc. 53. Drlg. sh. 2,977 ft.

Henshaw-Davis-Lacey No. 1 Farias hrs., Tr. 255, Porc. 39. Sd. 2,769-85 ft.; set csg. to perf.

Weekly Oil Co. No. 3-B Guerra, Tr. 12, Porc. 41. Drlg. sh. 1,847 ft.

San Diego—Jim Wells County

Houston Oil Co. No. 1 Hawkins & Wallace, 990 ft. S and E lines, Blk. 11. Fsg. 6,301 ft.

Callihan—McMullen County

Sunray Oil Co. No. 10 Glass, Blk. 46, M. Hely Sur. D.&A. 1,502 ft.

Swearingen et al No. 1 Callihan, 150 ft. N line, 275 ft. E line, Blk. 17, M. Hely Sur. S.D. 1,670 ft.

Jacob—McMullen County

Lema Oil Co. No. 106-A Jacob, 660 ft. W of No. 105. D.&A. 970 ft.

Saxet Heights—Nueces County

Bartlett & Reed No. 1 Carson, SW cor., 20-ac. tr., Villareal Sur. Drlg. 2,540 ft.

Capitol Oils, Inc., No. 1 L. Ayres, cen. 5-ac. tr., Villareal Sur. Drlg. 3,073 ft.

Circle Oil Co. No. 3 Whelan, 42.4-ac. tr., Villareal Sur. Testing sd. 4,076-84 ft.

Conroe Drlg. Co. No. 2 John Dunn, Villareal Sur. T.D. 4,064 ft.; C.O.

Conroe Drlg. Co. No. 2 McBride, NE cor. 59-ac. tr. Cg. 4,107 ft.

Conroe Drlg. Co. No. 3 McBride, 660 ft. W of No. 2. R.U.

J. K. Culton No. 5 Whelan, 60-ac. tr. Testing 4,077-84 ft.

Erin Oil Co. and Lee Bros. No. 1 Nut Club, 1.5-ac. tr., Lots 1, 2, 8, Blk. 1, Ellendale Gardens 2 and 3. P.B. to whipstock 3,700 ft.

Erin Oil Co. No. 1 Spiller, cen. 1.6-ac. tr., Ellendale Gardens No. 3. Drlg. 3,-227 ft.

L. Glasscock No. 1 Thornton, 5.37-ac. tr., Villareal Sur. Set csg. 4,088 ft.; comp.

Graham & Roberts No. 1 Carver, Ellendale Gardens. T.D. 4,080 ft.; comp.; no gauge.

Graham & Roberts No. 1 Curry, Villareal Sur. Set sur. csg.; W.O.C.

J. T. Graham No. 1 Phillips, 200 ft. W line, 104 ft. N line tr. Sd. 4,072-79 ft.; cleaning in pits.

Tom Graham No. 1 Whelan, 330 ft. N and E lines, 40-ac. tr., Villareal Sur. T.D. 5,254 ft.; P.B. and perf. 4,058 ft.; comp.; no gauge.

Johnson et al No. 1 Cowles, 160 ft. W line, 75 ft. S line tr. T.D. 3,500 ft.; fsg.

Ray Johnson et al No. 1 Pearson, 2-ac. tr., Ellendale Gardens No. 2. T.D. 4,080 ft.; comp.; est. 900 B.P.D. on 3/10-in. choke.

Ray Johnson No. 1 Smith, 3-ac. tr., Bancroft farm lots. Set sur. csg.; W.O.C.

Johnston et al No. 1 Werner, Blks. 11, 12, Ellendale Gardens No. 1. Spudded in.

J. P. Nash No. 1 Hatch, 330 ft. E line, 360 ft. N line tr., Blk. F. Top sd. 5,173 ft.; S.O.&G.; testing 5,175-86 ft.

Port O. & G. Co. No. 1 Sherman, 150 ft. N and W lines, Blk. 20. Set sur. csg.; W.O.C.

Republic Nat. Gas Co. No. 4-B Baldwin, 790 ft. SE of No. 2, 330 ft. NE line, Blk. 19. Cg. 4,082 ft.

Southern Minerals Corp. No. 2 Alkali, 660 ft. N of No. 1, midway E and W lines of tr. T.D. 4,085 ft.

Taylor Ref. Co. No. 1 Corpus Christi Golf and Country Club, 83-ac. tr., Villareal Sur. R.U.

Taylor Ref. Co. No. 1 Kalar, Villareal Sur. Set csg. 4,068 ft.; W.O.C.

Taylor Ref. Co. No. 2 Saunders, Villareal Sur. T.D. 4,078 ft.; comp.; 190 B.P.D.

R. Y. Walker No. 1 Clark, Villareal Sur. Testing sd. 4,061-65 ft.

Westgate Oil Co. No. 2 Sturm Est., 89-ac. tr., Villareal Sur. Drlg. 210 ft.

Saxet—Nueces County

R. B. Bryan No. 1 Clarkwood Townsite, 105 ft. S line, 190 ft. W line tract, Blk 14, Land Sur. 404. T.D. 4,428 ft.; comp.; no gauge.

Tom Graham No. 2 Flato, Blk. 30. Perf. 4,548-55 ft.

Houston Oil Co. No. 10 Morgan, sec. 7, Rincon del Oso Sur. T.D. 4,864 ft.; comp.; no gauge.

Morgan Gulf Oil Co. No. 2 Morgan, 990 ft. N and E lines, Sur. 403. Drlg. 4,-880 ft.

Renwar Oil Co. and Maryland Corp. No. 1 Manatt, cen. Blk. 5, Clarkwood townsite. Drlg. 2,853 ft.

Republic Nat. Gas Co. No. 1-B Baldwin, 660 ft. S No. 3, 44-ac. tr. Drlg. 1,257 ft.

W. A. Richardson No. 2 Meredith, Lot 11, Clarkewood townsite. T.D. 4,423 ft.; washing in.

Renwar Oil Co. No. 1 Morgan, sec. 315. Drlg. ady. sh. 380 ft.

W. A. Richardson No. 2 Isensee, C Blk. 7, Clarkwood townsite. Set sur. csg.; W.O.C.

W. A. Richardson No. 1 Smith, C Blk. 4, Clarkewood townsite. Spudded in.

Southern Minerals Corp. No. 2 Isensee, cen. Blk. 7, Clarkwood townsite. Drlg. 3,221 ft.

Southern Minerals Corp. No. 4 Isensee, SE cor. 235-ac. tr., C. Land Sur. 404. M.I.M.

Southern Minerals Corp. No. 1 Mastin, G. Frank Sur. 416. Drlg. 957 ft.

Southern Minerals Corp. No. 3 Smith, Blk. 4, Sheppard Farm Lots. T.D. 4,864 ft.; comp.; no gauge.

Southern Minerals Corp. No. 3-A Isensee, 47-ac. tr., C. Land Sur. 404. Comp.; flowing in stg.

Southern Minerals Corp. No. 5-A Isensee, sec. 404. Drlg. 4,027 ft.

Texon Royalty Co. No. 1 Lingnau, 13.44-ac. tr., C. Land Sur. 404. M.I.M.

Texon Royalty Co. No. 1 McElroy, 115 ft. N line, 105 ft. W line, 40-ac. tr., Gallagher Sur. Set sur. csg.; W.O.C.

Texon Royalty Co. No. 2 Vance, 100 ft. N and E lines, 100-ac. tr., Gallagher Sur. 402. Sd. 4,408-24 ft.; comp.; cleaning in pits; no gauge.

Plymouth—San Patricio County

Humble O. & R. Co. No. 1 Bevly, 466 ft. N and W lines tr., Blk. 8, sec. 35, Taft Subd. Set sur. csg. 637 ft.; W.O.C.

Plymouth Oil Co. No. 40-C Welder, 1,472 ft. W line, 3,119 ft. S line, sec. 49. T.D. 5,648 ft.; comp.; 175 B.P.D.

Plymouth Oil Co. No. 41-C Welder, 4,027 ft. S line, 1,244 ft. W line, sec. 49. T.D. 5,503 ft.; comp.; 163 B.P.D.

Plymouth Oil Co. No. 42-C Welder, 2,932 ft. N line, 2,043 ft. E line, sec. 49. Set csg. 5,631 ft.; W.O.C.

Plymouth Oil Co. No. 43-C Welder, 2,046 ft. S line, 2,355 ft. W line, sec. 49. Drlg. sh. 3,065 ft.

Plymouth Oil Co. No. 44-C Welder, 5,256 ft. S line, 1,312 ft. E line, sec. 71. Set sur. csg. 328 ft.; W.O.C.

Plymouth Oil Co. No. 45-C Welder, 1,128 ft. S line, 2,522 ft. W line, sec. 49. R.U.

Sun Oil Co. No. 4 Hunt, 466 ft. S and W lines, 154.39-ac. tr. Cg. 5,619 ft.

Taft Field—San Patricio County

Humble O. & R. Co. No. 1 Godwin, 330 ft. S and W lines, sec. 23, Taft, Farm Lands, Third Addn. T.D. 4,100 ft.; drlg. in sdtkd. hole 3,940 ft.

Humble O. & R. Co. No. 2 Mayo, 1,323 ft. S line, 1,152 ft. E line tr., Tabor Sur. Drk.

Shell Pet. Corp. No. 1 Pullin, Blk. 4, sec. 1. Cg. sh. 4,360 ft.

Rio Grande City—Starr County

Tech Oil Co. No. 8 Dayno, 495 ft. N line, 528 ft. W line, Blk. 4, Sh. 77-A, Porc. 81. Sd. 1,440-46 ft.; set csg.; W.O.C.

Samfordyce—Starr County

Phillips and Barnsdall No. 8 Yturria L. & L. Co. 110-ac. tr., E ½ Porc. 100. Sd. 2,780-94 ft.; comp.; 40 B.P.D.; 7/37-in. choke.

Phillips and Barnsdall Oil Co. No. 9 Yturria L. & L. Co., 709 ft. W line, 1,-710 ft. S line tr., E½, Porc. 100. Set sur. csg.; W.O.C.

Porter & Pickens No. 3-B Garcia Land & Cattle Co., W½, Porc. 100. D.S.T. 240 ft.; P.L.O. 10 min.; sd. 2,791-96 ft.; set csg.; W.O.C.

Aviator—Webb County

Five Spot Drlg. Co. No. 1 Bruni, Blk. 44, Albercas grant. Drlg. 1,217 ft.

Carolina-Texas—Webb County

Foster Barnsby No. 5 Webster, Sur. 684. T.D. 3,047 ft.; whipstocked 2,490 ft.; set csg.; sd. 3,032-47 ft.; comp.; 10 B.P.D.; jetting.

Cole—Webb County

Cole Pet. Co. No. 95 Rosa Benavides, Blk. 7, Sur. 7. P.B. 2,935-53 ft.; comp.; 40,-000,000 ft. gas.

Cole Pet. Co. No. 96 Benavides, Blk. 2, Sur. 7. D.&A. 2,455 ft.

Lopez—Webb County

Hunter Co. No. 8 Billings, 1,650 ft. N line, 2,310 ft. E line, Sur. 113. Set csg. 2,184 ft.; W.O.C.

C. H. Lewis No. 6 Lopez, sec. 110. M.I.M.

Luling O. & G. Co. No. 1 Peal, 330 ft. S and E lines, Blk. 11, Sur. 72. Sd. 2,-077-90 ft.; tested gas; T.D. 2,327 ft.; P.B. to shut off wtr.

Mills Bennett Prod. Co. No. 5 Garcia, Sur. 113. Drlg. 112 ft.

Mills Bennett Prod. Co. No. 3 Montemayor, 2,310 ft. W line, 2,042 ft. N line, Sur. 114 Drlg. 1,832 ft.

Mills Bennett Prod. Co. No. 7 Montemayor, 1,429 ft. N line, 330 ft. W line, Sur. 114. Drlg. 2,150 ft.

Mills Bennett Prod. Co. No. 5 Valdez, Sur. 114. Comp.; 22 B.P.H.; sd. 2,191-2,202 ft.

Mills Bennett Prod. Co. No. 9 Valdez, Sur. 114. Comp.; 20 B.P.H.; sd. 2,188-2,200 ft.

Mortimer & Springer No. 3 Paula Vela, Sur. 114. Sd. 2,190-2,206 ft.; comp.; 12 B.P.H.

Mortimer & Springer No. 4 Paula Vela, Sur. 114. R.U.

Mortimer & Springer No. 9 Maria Lopez, Sur. 112. Sd. 2,226-43 ft.; comp.; 15 B.P.H.

Mortimer & Springer No. 10 Maria Lopez, Sur. 112, 660 ft. N of No. 9. Drlg. 2,127 ft.

Superior Oil Co. No. 4-A Billings, 990 ft. S line, 330 ft. E line, Sur. 113. Comp.; 15 P.B.H.; 2,240 ft.

Superior Oil Co. No. 5 A. S. Billings, Sur. 113. T.D. 2,190 ft.; swbg.

Superior Oil Co. No. 6-A Billings, Sur. 113. Set sur. csg.; W.O.C.

O'Hern—Webb County

Jameson & Byron No. 1 S. Benavides, Sur. 173. R.U.

Hamil & Smith No. 1 Bruni, 330 ft. N and W lines, Sur. 2,213. Sd. 2,915-35 ft.; comp. on pump; no gauge.

Magnolia Pet. Co. No. 5 J. Benavides, Blk. 360. Set sur. csg. 41 ft.; W.O.C.

Magnolia Pet. Co. No. 10 Seacord-Benavides, Hale Subd., Arispe grant. Comp.; 14 B.P.H. on 5/16-in. choke; T.D. 2,-804 ft.

Magnolia Pet. Co. No. 11 Seacord-Benavides, Blk. 359. Drk.

Magnolia Pet. Co. No. 8-B Servando-Benavides, Hale Subd., Arispe grant. Comp.; 15 B.P.H. on 5/16-in. choke; T.D. 2,838 ft.

Otis Phillips No. 1 Benavides, Blk. 360. Sd. 2,825-41 ft.; W.O.C.

T. S. Reid No. 1 Benavides, Blk. 319. Sd. 2,836-50 ft.; comp.; 40 B.P.H.

T. S. Reed No. 2 Brennan-Benavides, Blk. 318. R.U.

Texas Co. No. 15 Benavides, Blk. 424. Set csg. 2,829 ft.; W.O.C.

Texia Oil Corp. No. 1 Benavides, Blk. 361. Loc.

Texia Oil Corp. No. 1 Benavides, Blk. 170. T.D. 2,686 ft.; D.&A.

Escobas—Zapata County

B. W. Roscoe No. 4 Bustamante, Share 33. Drlg. 628 ft.

S.R.C. Oil Co. No. 10-E Trevino, 40-ac. tr., Blk. 3, Sur. 65. Comp.; 20 B.P.H.; T.D. 1,279 ft.

Texas Co. No. 87 Whitehead, Cerrito Blanco grant. Comp.; 25 B.P.D.; pmpg. sd. 1,258-64 ft.

Haynes—Zapata County

Clover O. & G. Co. No. 11 Haynes, 1,000 ft. SW line, 1,450 ft. NW line, Blk. 7. Sd. 893-909 ft.; comp.; 40 B.P.D. on pump.

Clover O. & G. Co. No 12 Haynes, Blk. 7. Loc.

WEST TEXAS WILDCATS

Andrews County

Humble O. & R. Co. No. 1 J. M. Spinks, sec. 13, Blk. A-20. S.D. 4,521 ft.

Brewster County

F. C. Dodson No. 1 Texas American Synd., sec. 66, Blk. 10, G.H.&S.A. Sur. T.D. 1,305 ft.; U.R. csg.

Cochran County

Cascade and Honolulu Oil Corp. No. 1 E. B. Duggan, cen. Labour 13, League 55, Oldham County School Land. Loc.

Concho County

Maverick Oil Co. No. 1 Jim Rice, sec. 18, I.N.R.R. Sur. T.D. 2,454 ft.; P.B.

W. C. Nelson et al No. 1 Rice, 1,980 ft. S and 660 ft. W, sec. 13, H.&T.C. Sur. Fsg. 200 ft.

John W. Westbrook No. 1 Ledbetter, sec. 2, Sur. 1,673. S.G. 2,110 ft.; S.D. 2,560 ft.

Crane County

Big Basin Pet. Co. No. 1 Cowden. S.D. 2,602 ft.

Clark et al No. 1 A. P. Jordan, sec. 12, Blk. B-22, P.S.L. Sur. Machine.

Gulf Oil Corp. No. 3 W. N. Waddell, 1,-980 ft. from S and W, sec. 18, Blk. B-21. Rig.

Gulf O. Corp. No. 2 Tubbs, 440 ft. N and E, sec. 12, Blk 27-B. R.U.

Humble O. & R. Co. No. 2 Tubbs, sec. 11, Blk. B-27. Drlg. 1,754 ft.

Moore Bros. No. 1 Barnsley, sec. 43, Blk. 32, P.S.L. Sur. Drlg. 3,158 ft.

Rider et al No. 1 Thaxton, 200 ft. from NE and 2,570 ft. from SE, sec. 2, W. L. Wilkenson Sur. Spudded and S.D.

Sinclair Prairie Oil Co. et al No. 1 Tubbs sec. 3, Blk. B-27. T.D. 3,698 ft.; testing.

L. R. Stroud No. 1 Moseley. Drlg. 745 ft.

Crockett County

John I. Moore No. 1 A. C. Hoover, sec. 4 Blk. FF, B.&B. Sur. T.D. 650 ft. U.R. csg.

Ector County

W. Dunning, Jr., No. 1 H. E. Cummins, sec. 33, Blk. 45, Twp. 1n, T.&P. Sur. Fsg. 2,825 ft.

Edwards County

Paul Teas No. 1 J. B. Stewart, sec. 2, Blk. DA, G.C.&S.F. Sur. Drlg. 4,926 ft.

Fisher County

Forest Dev. Co. No. 1 A. M. Dry, sec. 108, Blk. 2, H.&T.C. Sur. Drlg. 2,220 ft.

Gaines County

Landreth Prod. Co. No. 1 Kirk, sec. 33, A-21. Drlg. 1,640 ft.

W. T. Walsh et al No. 1 Averitt, sec. 228, Blk. G, W.T.R.R. Sur. Elev. 3,322 ft.; fishing 4,910 ft.; backed up 2,180 lbs. pressure.

Glasscock County

Fleetborn Oil Corp. No. 1 F. C. Dodson, sec. 13, Blk. 34, Twp. 3s, T.D. 2,850 ft.; set 7-in. csg.; S.O. 2,685-93 ft. and wtr. at 2,780 ft.

Bruce Frazier No. 1 E. Patterson, 330 ft. N and E, sec. 188, Blk. 29, W. & N.W. Spudded and S.D.

Howard County

Southern Oil Co. No. 1 W.P. Edwards, sec. 32, Blk. 30, Twp. 1s, T.&P. Sur. Fsg. 1,530 ft.

D. C. Reed et al No. 1 Walter Pike, 660 ft. from S and E, sec. 24, Blk. 33, Twp. 1n, T.&P. Sur. M.I.M.

Hudspeth County

Haymon Krupp Oil & Land Co. No. 1 Thaxton, sec. 34, Blk. 74, Twp. 6, T.&P. Sur. T.D. 893 ft. Fsg.

Jeff Davis County

C. M. Joiner No. 1 Jones & Coffield, sec. 8, Blk. 3, H.&T.C. Sur Drlg. 3,275 ft.

Jones County

Bob Elmore No. 1 Coton, sec. 10, D.D.&A lands, 3 mi. W of Avoca. Drlg. 2,102 ft.

Fain-McGaha Oil Corp. No. 1 Hayden, E. C. Martinez Sur. 195. S.D. 1,750 ft.

Pondren Prod. Co. No. 1 Cox & Manley, F. Sieberman Sur. No. 8. Drlg. 1,827 ft.

T. D. Humphrey No. 1 J. M. Radford, 1,-285 ft. S and 200 ft. W, sec. 19, Blk. 16, T.&P. Sur. Drlg. 225 ft.

Parker No. 1 C. L. Brown, sec. 9, Blk. 2, T.&N.O. Sur. T.D. 1,540 ft.; to set csg.

Kimble County

Dr. B. D. Thomas No. 1 Rust, sec. 47, B.S.&F. Sur., 12 mi. NW of Junction. Location.

Martin County

Woodley Pet. Co. No. 1 M. S. King sec. 30, Blk. 35, Twp. 2s, T.&P. Sur. Drlg. 3,000 ft.

Menard County

Wilcox O. & G. Co. No. 1 Merchenson, sec. 58, F.L.R.R. Sur. Abst. 1,810, 8 miles S of Menard. Drlg. below 1,825 ft.

Pecos County

S. Thompson No. 1 Elsinore Cattle Co., sec. 53, Blk. D, G.C.&S.F. Prep. to spud.

Trans-Pecos Oil Co. No. 1 F. W. Popham, sec. 235, Blk. 11, G.H.&S.F. Sur. Drlg. 400 ft.

Trans-Pecos Oil Co. No. 1 Gallaher, sec. 9, Blk. 51, T.&P. Sur. Spud and S.D.

Presidio County

Linderman Bros. Oil Corp. No. 1 J. R. Bledsoe & Badgley, sec. 15, Blk. 351, G.C.&S.F. R.R. Co. Sur., 2½ mil. NE of Presidio. T.D. 1,635 ft.; trying to loosen pipe.

Reagan County

Bahan & Rhodes No. 1 M. Chase, 1,320 ft. from N and E, sec. 40, Blk. 36, Twp. 5s, T.&P. Sur. Loc.

Runnels County

Golden Pet. Co. No. 1 Giesecke, 14,462 ft. from N and 6,790 ft. from E, James Hughes Sur. S.D. 118 ft.

Schleicher County

Cardinal Oil Co. et al No. 1 J. A. Whitten, sec. 35, Blk. LL, T.C.R.R. Sur. U.R. at 1,370 ft.; drlg. 3,015 ft.

Magnus Oil Co. No. 1 Judkins & Spencer, C SW¼ sec. 4, Blk. V-28. Elev 2,209 ft.; S.G. 4,350 ft.; drlg. 5,076 ft.; gas sd. 4,956-58 ft.

Scurry County

Bristow & Cantrill No. 1 Shannon Est., sec. 331, Blk. 97, H.&T.C. Sur. Drlg. 3,-162 ft.

Tom Green County

Spinner No. 1 Reed, 330 ft. S and W of Sub. 39, Mason & Perry Sur. Old T.D. 508 ft.; now drlg. 1,775 ft.

Upton County

Greencliff Oil Corp. et al No. 1 J. B. Tippett, C NE¼ sec. 58, Blk. Y, T.C. Sur. T.D. 4,370 ft.; tb abd.

Ward County

Abell Brothers' No. 1 Lancaster Estate sec. 61, Blk. 8, H.&G.N. Sur. in Pecos County, 5½ miles down Pecos River from NW cor. of Pecos and E cor. of Reeves County. S.D. 2,425 ft.

Gulf Oil Corp. No. 1 W. A. Estes, 330 ft. from NE and SE, sec. 38, Blk. 34, H.& T.C. Sur. Loc.

Lindsay & Bolin No. 1 Thomas, sec. 31, Blk. 34, H.&T.C. Sur. S.D. 2,820 ft.

Olsen & Anderson No. 1 Yell, W. F. Stewart Sur., sec. 6, T.D. 2,600 ft.; P.B. to 2,455 ft.; standardizing.

Richardson Oils, Inc., No. 1 Hathaway, sec. 37, Blk. 34 H.T.C. Sur. Material.

Superior Oil Co. No. 1 J. H. Hughes, sec. 67, Blk. 34, H.&T.C. Sur. T.D. 1,995 ft.; U.R. csg.

Winkler County

Bert Fields et al No. 1 Pure-Clapp, 330 ft. N and E, sec. 26, Blk. 26. Drlg. 1,-975 ft.

Illinois Oil Co. No. 1 McCutchen, sec. 16, Blk. B-3. Cellar.

R. H. Henderson et al No. 1 J. B. Walton, sec. 10, Blk. 26. T.D. 3,045 ft.; shot; to complete.

R. H. Henderson No. 2-B Walton, 330 ft. from N and W, sec. 10, Blk. 26. Drlg. 2,275 ft.

Herbert Oil Co. No. 1 I. Hendrick, 2,310 ft. from S and W, sec. 14, Blk. 26. T.D. 2,940 ft.; shot; testing.

Humble O. & R. Co. No. 2-C Walton, 1,-650 ft. from S and W, sec. 34, Blk. 74, P.S.L. Sur. Spudded.

Illinois Oil Co. No. 1 Central State Bank of Abilene, sec. 23, Blk. 26, P.S.L. Sur. Drlg. 2,900 ft.

Magnolia Pet. Co. No. 1 State-Walton, sec. 7, Blk. B-3. T.D. 3,695 ft.; P.B. 3,650 ft.; acidized; sulfur wtr.

Fred Hyer No. 1 Evans, sec. 8, Blk. 66. Drlg. 3,830 ft.

Joiner No. 1 Evans, sec. 46, Blk. 73, P.S.L. Sur. Fsg. 3,125 ft.

Read & Duffey No. 1 Sealey, 330 ft. from N and W, sec. 8, Blk. A, G.M.M.B.&A. Sur. Loc.

Superior O. & G. Co. of Tulsa No. 1 M J Hill, sec. 18, Blk. B-11, P.S.L. Sur. Drlg. 2,210 ft.

Wahlenmaier and Atlantic Oil Prod. Co. No. 1-A Walton, sec. 34, Blk. 74. T.D. 2,883 ft.; comp. as gasser.

Yoakum County

C. J. Davidson et al No. 1 Bennett, sec. 678, John H. Gibson Sur. Elev. 3,557 ft.; T.D. 5,278 ft.; P.B. 5,264 ft.; shot; flowed 230 bbls. in 24 hrs.; ran tbg.

Stogner et al No. 1 Roosevelt, 2,230 ft. from N and 330 ft. from E, sec. 215, Blk. D, John H. Gibson Sur. Drld. 98 ft.; rotary moved in.

E. C. TEXAS WILDCATS

Bowie County

Woodley Pet. Co. No. 1 Lumpkin. S.D. 3,260 ft.

Cherokee County

Peveto et al No. 1 C. R. Kelley, 150 ft. out of NW cor. of Jose Pineda Sur., 3

mi. N of Jacksonville. Drlg. 1,225 ft.; elev. 585 ft.

Fannin County

L. P. Kean No. 1 Kelley, Wm. Kelley Sur., 3 mi. SW of Ladonia. S.D. 2,-380 ft.

Grayson County

Olson Drlg. Co. No. 1 Southwestern Life Ins. Co., J. C. Jamison Sur., 6 miles NW of Denison. Elev. 767 ft. Top Viola 4,-901 ft.; top Woodford 4,474 ft.; drlg. 5,-670 ft.

P. A. Shaver No. 1 Wm. Blair, 900 ft. from S of survey and 10 ft. from Cook-Grayson County line, R. H. Deavers Sur., 1½ mi. SW of Tioga. R.U.

Freestone County

Clark & Cowden No. 1 M. Scott, Church Lot in Amalt Sur., 7 mi. N of Fairfield. S.D. 31 ft.

Henderson County

McDougal et al No. 1 E. Price, 965 ft. S and 660 ft. E of most westerly W line, M. Mathews Sur., 4 mi. S of Trinidad. Drk.

Kaufman County

Scott & Woodside No. 1 Robinson, A. Cherino Sur., 800 ft. SW line and 500 ft. NW line, 80-ac. tr., 2 mi. W of Scurry. Drk.

Lamar County

J. Forrester et al No. 1 J. E. Woodward, L. Highton Sur., but in J. W. Woodward Sur., 1 mi. E of Mintel. Top Paluxy, 3,060 ft.; elev. 402 ft.; top anhydrite 3,735 ft.; S.D. 4,360 ft.

Limestone County

C. L. Lytle No. 1 J. L. Thompson, P. Varella Sur., Mexia field. Drlg. 5,620 ft.

Nacogdoches County

Overtex Oil Co. No. 1 Hazelwood, J. L. Ewing Sur., 15 mi. S of Nacogdoches. Drlg. 5,510 ft.

Red River County

Abercrombie-Harrison No. 1 Temple Lbr. Co., D. D. Bruton Sur., 1,356 vrs. W and 1,492 vrs. S of NE cor. survey, 10 mi. NE of Clarksville. M.I.M.

Midwest and Texhomia Oil Co. No. 1 Hacker & Hughes, M.E.&P. Sur., 9 mi. NE of Talco. S.D. 200 ft.

Orr et al No. 1 Kurth Lbr. Co., 3,960 ft. from N and 600 ft. from W line of E. Smith Sur., center of county. Top Georgetown 600 ft.; drlg. 1,005 ft.

Williams et al No. 1 L. and O. Roberts, James Bankston Sur., 2 miles NE of Annona. Elev. 396 ft.; S.D. 725 ft.

Rusk County

McCallum et al No. 1 E. C. Gary, John Pilgrim Sur., 5 miles S of Henderson. Elev. 338 ft.; S.D. 3,440 ft.

Pure Oil Co. No. 1 W. H. Faulkner, Wm. Elliott Sur., S of Concord. Elev. 562 ft.; top Austin 3,282 ft.; drlg. 3,425 ft.

J. W. Shipman et al No. 1 Citizens Natl. Bank, NE cor. of 125-ac. tract, J. J. D'Barbo Sur., 4 miles NE of Henderson. S.D. 3,510 ft.; R.U.R.

Titus County

Humble O. & R. Co. No. 1 M. B. Groves, Ben Jones Sur. Cut fault at 1,642 ft.; Top Woodbine 3,240 ft.; ran Schlumberger; no showing; S.D. 4,492 ft.; T.A.

Humble O. & R. Co. No. 1 M. Galt, R. Winn Sur. 1½ S.E. Talco; elevation 346 ft.; drlg. 3,246 ft.

Humble O. & R. Co. No. 2 Groves, 990 ft. from S and C of E and W lines of lse., B. Jones Sur. Drlg. 206 ft.

Jule Alford, tr., No. 1 W. D. Fry, I. P. Stern Sur., 1½ mi. S of Carr well. Elev. 319 ft.; fsg. 4,275 ft.

Magnolia No. 1 Carr, M. V. Delgado Sur., 317 ft. due W of Pleasant Oil Co. No. 1 Carr, 580 ft. N line and 158 ft. E line, 70-ac. tr. M.I.M.

EAST TEXAS

(Border Counties)

Cass County

American Liberty Oil Co. No. 1 Marcus Rembo, J. H. Reeves Sur. Drlg. 4,996 ft.

American Liberty Oil Co. No. 2 Maxie, John Collum Sur. Set 16-in. 226 ft.; drlg. 925 ft.

American Liberty Oil Co. No. 3 Maxie, John Collum Sur. R.U.

McElvane et al No. 1 Beckett, John Collum Sur. R.U.

R. W. Norton No. 2 Haywood, Priscilla Evans Sur. R.U.

R. W. Norton No. 2 Mary Rives, John Collum Sur. Drlg. 5,411 ft.

Harrison County

R. C. Payne et al's No. 1 Lowery, H. D Spain Sur. P.B. to 3,524 ft.

Marion County

M. S. Holman's No. 1 Henderson, R. Bennington Sur. P.B. to 2,443 ft.

Panola County

George Hudson et al's No. 1 J. F. Wall & McGeary Sur. Set 8-in. 40 ft.; fshg. for core bbl. at 2,345 ft.

Geo. Le Grand No. 1 P. J. Wardleigh, A. Thompson Sur. Set 10-in. 62 ft.

TEX. PANHANDLE WILDCATS

Cottle County

Alma Oil Co. No. 1 Yarbrough, sec. 548, Blk. H, W.&N.W. Sur. Show gas and oil 4,200-08 ft.; drlg. 5,240 ft.; sh. and lime shells.

Gray County

Joana Oil Corp. No. 1 Rendleman, 330 ft. from S and W lines of NE¼ of sec. 146, Blk. B-2, H.&B.N. Sur. R.U.R.

K. Kinsey No. 1 Stephens, sec. 187, Blk. N and 1,900 ft. from E. sec. 546, Blk. H. B-2, H.&G.N. Sur. T.D. 2,475 ft.; S.D.

Saulsbury Oil Co. No. 1 Husted, C W¼ sec. 116, Blk. B-2, H.&G.N. Sur. Fishing 2,733 ft.

Hartley County

O. V. Beck et al No. 1-A Matador Ranch sec. 20, Blk. 22, C.S.S. Sur. Pipe stuck 4,600 ft. and S.D.

Hutchinson County

Phillips Pet. Co. No. 1 Bryan, sec. 6, Blk M-21, T.C. Ry. Sur. Drlg. 2,350 ft. sh.

Power Pet. Co. No. 1 Hodges, sec. 16, Blk. M-35, T.C. Sur. Top pay 3,050 ft.; shot; swabbed 120 bbls. oil and 20 bbls. water in 12 hrs.

L. L. Travis et al No. 1 Hodges, sec. 14, Blk. X-02, H.O.&B. Sur. T.D. 2,905 ft.; lime; rng. csg.

Moore County

Shamrock O. & G. Co. No. 1 Ryan-Jones, sec. 190, Blk. 3-T, T.&N.O. Sur. T.D. 3,321 ft.; tested 112,500,000 ft. gas; now R.U. to deepen.

Wheeler County

Allender & Heare No. 1 Harvey, sec. 67, Blk. 13, H.&G.N. Sur. T.D. 2,187 ft.; fsg.

Ben G. Barnett No. 1 Stewart, sec. 73, Blk. 13, H.&G.N. Sur. S.D. 2,136 ft.

Dumar O. & G. Co. No. 1 Slavik, sec. 108, Blk. 33, H.&G.N. Sur. Drlg. 1,932 ft.

Johnston et al No. 1 Rabo, sec. 105, Blk. 33, H.&G.N. Sur. Spudded and S.D.

Phillips Pet. Co. No. 1 Porter, sec. 35, Blk. A-8, H.&G.N. Sur. Drlg. 2,315 ft.; lime.

Smith Bros. No. 1 Woodward, sec. 23, Blk. 24, H.&G.N. Sur. S.D. 2,240 ft.

N. C. TEXAS WILDCATS

Archer County

L. T. Burns No. 1 Turbeville "K," sec. 151, R. Carbon Sur. A-54. Location.

Continental Oil Co. No. 7 C. . Zanecetti, sec. 9, S.P.R.R. Sur. A-417. Derrick.

C. Crosby No. 1 Ray, Blk. 150, Harris Sub. T.D. 600 ft.; S.D. for water.

Deep Oil Dev. Co. No. 11, Lease 4, L. F. Wilson, sec. 76, A.T.N.C. Lands. C.O. after shot; est. 120 bbls.; P.O.P.; C.O. and testing; est. 75 bbls.

J. D. Hardegree No. 1 Gus Symank, Blk. 11, Meade Sur., L.&M. Subdvn. Derrick.

Lickey & Guffy No. 1 J. R. Parkey, sec. 1, S.P. Sur. A-423. Drlg. 1,755 ft.

Texas Co. No. 1 J. H. Turbeville "I," J. W. Cain Sur. A-49. Drlg. 1,700 ft.

Wilson-Ligon No. 1 M. B. Kolb, Blk. 116, Harris Subd. R.U. and S.D.

Baylor County

Consolidated Oil Co. No. 1 W. H. Portwood "Z," T.E.&L., sec. 1,573. Drlg. 1,045 ft.

K. R. March No. 1 W. B. Self, A. Hines A-156. Drlg. 450 ft.

Morris & Spoonts No. 1 D. K. Martin, sec. 212, T.&N.O. Sur. A-748. Drlg. 960 ft.; S.D.

Morris & Spoonts No. 1 J. M. Parker, B.B. B.&C. Sur., sec. 148, Blk. A. Spudded and S.D.

W. P. Morris et al No. 1 C. T. Porter, Edward Brown Sur. Sand with S.O. and gas 1,330-34 ft.; T.D. 1,333 ft.; fshg.

Cooke County

Anderson & Kerr No. 1 F. A. Bruthmeyer, H. Stroud Sur. A-930. Sd. 1,882-95 ft.; test wtr.; S.S.O. 2,010-15; 5-in. cmtd. 2,005; W.O.C.

Anderson & Kerr No. 1 C. A. Stelzer, T. B. Stroud Sur. No. A-950. Drlg. 2,000 ft.

Cain & Chandler No. 1 J. B. Burch, J. McWilliams Sur. A-658. R.U.R.

Hardin Oil Co. No. 1 J. G. Bonner, J. Lindheimer Sur. Drlg. 1,889 ft.

B. H. Hilburn No. 1 Hugan, A. Myers Sur. No. A-640. Location.

Lanier et al No. 1 Thetford, S.P.R.R. Sur. A-987. Drlg. 1,018 ft.

L. A. Long et al No. 1 Sarles, Hunt County School Lands Sur. A-440. Drlg. 2,245 ft.; S.S.O. 2,230-58 ft.; 5-in. 2,323 ft.; test water and show oil.

Hank Masterson No. 1 R. J. Timms, J. W. McPherson Sur. A-696. S.S.O. at 1,753-61 ft.; 6⅝-in. 1,756 ft.; drlg. plug.

N. Newburn No. 1 Dotson, Wm. Campbell Sur. A-238. S.D. 1,543 ft., drill pipe.

Petroleum Producers No. 1 J. W. Mount, J. C. Meeks Sur. A-758. Drlg. 1,275 ft. S.S.O. 1,540-45 ft.; est. 50 bbls.; testing.

H. F. Potts No. 1 S. D. Meador, B.B.B.&C. Sur. A-138. Drlg. 1,530 ft.

L. E. Rader No. 1 McCubbin, R. Wheelock Sur. A-1,884. Drlg. 1,213 ft.; sand 1,556-66 ft.; S.D. for 6-in. csg.; rmg. to set pipe.

W. F. Russell No. 1 Belle Payne, Marshall University Sur. A-620. Drlg. 320 ft.

J. M. Russell et al No. 1 B. B. Bawley, Blk. 24, John Barnett Sur. C.O.

Ruwaldt-Couch No. 1 Fleitman, L. Mikel Sur. A-747. Drlg. 1,551 ft.

Seitz, Comegys & Seitz No. 1 Field & Bowers, L. Raney Sur. A-878. Location.

Sunray Oil Co. et al No. 1-A A. C. McCall, W. H. White Sur. A-1,134. Drlg. 4,106 ft.

B. F. Thompson No. 1 F. Trubenback, P. Davidson Sur. A-337. Drlg. 612 ft.

Whitehead et al No. 1 W. Reed, F. Earthman Sur. A-349. Drlg. 580 ft.

Woodbine Oil Co. No. 1 Potter & Potter, J. Gorham Sur. S.D. at 900 ft.

Denton County

Jack Caudle et al No. 1 B. D. Jones, John Morton Sur. Spudded.

Oil Finance Corp. No. 1 J. S. Gambill, T. Burress Sur. Drlg. 1,042 ft.

C. S. Hoad No. 1 Travelers Insurance Co., Wm. A. Thompson Sur. A-1,238. Drlg. 455 ft.

Foard County

Humble O. & R. Co. No. 1 Burnett, sec. 16, Blk. X, S.P.R.R. Sur. Drlg. 3,150 ft.

Jack County

Bryson Oil & Gas Co. No. 1 G. E. Evett, Geo. Hardesty Sur. A-294. Drlg. 3,512 ft.

Clark et al No. 1 L. S. Wright, Z. S. Brooks Sur. A-64. O.S. 756-76; testing.

J. W. Cole et al No. 1 Mrs. D. C. Clayton, Lewis Knight Sur. A-224. R.U.R.

S. B. Edwards No. 1 Bryson, J. Hughson Sur. A-256. R.U.R.

Engineers Oil Co. No. 1 Cooke, J. Young Sur. Drlg. 1,300 ft.

W. H. Hammon No. 1 G. E. Evett, H. Plaster Sur. Loc.; spud.

W. H. Hammon et al No. 1 F. H. Rhodes, R. N. Erwin Sur. A-1,378. Loc.

Harper Pet. Corp. No. 1 Van Hooser, J. W. Morrow Sur. A-1,926. Drlg. 800 ft.

C. Kadane No. 1 E. F. Smith, S.P.R.R. Sur. A-552. Drlg. 800 ft.

E. C. Lawson et al No. 1 Patterson, Lewis Knight Sur. A-324. 2,950-64 B.S.S.O.; drlg. 3,038 ft.

Nelson Oil Synd. No. 1 J. P. McCoy, A. S. Ensworth Sur. Testing at 2,961-80 ft.; est. 40 bbls.; fishing liner.

Ray & Staniforth No. 1 L. J. Hester, J. Ash Sur. A-8. Drlg. 1,825 ft.; P.B. to 1,000 ft.; crooked hole; lost hole; skidding 30 ft. west.

Montague County

A. Gutowsky et al No. 1 J. E. Lemmon, Blk. 13, C. K. Hamm Sur. A-322. Drlg. 1,140 ft.

E. T. Hart No. 1 W. L. Davis, sec. 12, Jack Co. School Lds. Drk.

J. F. Hart No. 1 W. M. Talley, J. Perrin Sur. T.D. 1,740 ft.; fsg.

L. C. Heydrick No. 1 J. B. Lawrence, M. Burnside Sur. A-14. R.U.R.

Jim Seeds et al No. 1 Coomba, sec. 58, M.E.P.&P. Sur. S.D. 1,310 ft.

J. M. Holmes No. 1 H. D. Field, sec. 55, M.E.P.&P. Sur. A-528. S.D.

Throckmorton County

Ben Ashe et al No. 1 W. B. Parrott, sec. 961, T.E.&L. Sur. Loc.

Wichita County

Fisher & Moore No. 1 Gibson, sec. 302. Sand 1,834-60 ft.; C.O. 1,935 ft.

Tom Medders No. 1 Fassett, sec. 1 E.T. A-76. Drlg. 1,400 ft.

Reno Oil Co. No. 1 W. T. Waggoner-D, sec. 1, S.&M. Sur. A-393. Drlg. 640 ft.

Wilbarger County

Franklin Oil Co. No. 1 D. G. Feller et al, sec. 108, Blk. 14, H.&T.C. Sur. S.D. 1,570 ft.

Lane & Simons No. 1 Allison, sec. 43, H. &T.C. Sur., Blk. 12. R.U.R.

Pois & Schults No. 1 W. T. Waggoner, sec. 103, H.&T.C., Blk. 14. Spudding.

Ed S. Smith et al No. 1 W. T. Waggoner, sec. 50, Blk. 14, H.&T.C. Sur. Sd. 1,850-53 ft.; drlg. 1,875 ft.

Smith No. 1 S. A. Dill et al, sec. 32, Blk. 14, H.&T.C. Sur. S.D. 2,090 ft.

Wheeler et al No. 1 W. T. Waggoner, sec. 99, H.&T.C. Sur., Blk. 14. Drlg. 1,755 ft.

Young County

L. T. Burns No. 1 C. E. Braune, T.E.&L. Sur. 188. Location.

L. T. Burns No. 1 Logan, sec. 70, T.E.&L. Sur. Location.

Christie Bros. No. 1 Primitive Baptist Church, S. L. Hill Sur. A-126. Drlg. 4,240 ft.

C. C. Counts No. 1 W. E. Edwards, T.E.& L. Sur. 71. Drlg. 400 ft.

Curtis & Bracken No. 1 Allar Co., H. Garmes Sur. A-104. Drlg. 4,208 ft.

Dobbs Oil Co. and McLester No. 1 Laquey, J. Busse Sur. A-1,570. Drlg. 3,780 ft.

Nash & Windfohr No. 1 W. S. Simms, D. Franklin Sur. A-1,425. Drlg. 2,815 ft.

C. D. Neff et al No. 1 W. A. Dennis, C. F. Bass Sur. Drlg. 1,965 ft.

Pitzer & West No. 1 Harrell, J. Daily Sur. A-78. Drlg. 675 ft.

Pitzer & West No. 1 S. L. Thornton, sec. 1,015, T.E.&L. Sur. A-824. Drlg. 3,485 ft.

Rathke Oil Co. No. 2 J. T. Rogers, S. H. Graham Sur. A-134. Drlg. 3,840 ft.

A. T. Strong No. 1 Manley. Drlg. 2,490 ft.

H. J. Struth has been appointed statistician for the Mid-Continent Oil and Gas Association of Texas, with headquarters at Dallas, Tex. Mr. Struth served as special technical adviser to the Petroleum Administrative Board, Washington, D. C., and was later made secretary and district allocator for the Gulf Coast by the Planning and Coordination Committee.

The Last Word—

Deep Well Drilling

By Walter H. Jeffery

816 pages; 425 illustrations, including 12 large folded insert derrick diagrams.

CHAPTER TITLES

Coring
Geology
Water Supply
Use of Packers
Shooting Wells
Casing Methods
Derrick Lighting
Completing Wells
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The OIL and GAS JOURNAL
Tulsa, Oklahoma.

PERSONAL

LOUIS D. JURS, a director of Associated Oil Company and vice president of the engineering, transportation and supplies division, was honored by fellow executives and employes at a surprise party at the Transportation Club, San Francisco, on the occasion of completion of 25 years of service with the company. A handsomely bound book, containing the signatures of every employe in his division, was presented to Mr. Jurs by H. T. EARL, assistant vice president of Associated. Mr. Jurs joined Associated Oil Company in 1911 as draftsman and was successively promoted to chief draftsman, assistant chief engineer, chief engineer and in 1927 was made vice president.

HARRY F. HUFF, Atlantic Refining Company, Philadelphia, Pa., has been appointed member of the American Petroleum Institute committee on marketing equipment to succeed C. H. EHLERS, resigned.

E. P. ROWE, oil operator of Toronto, Ontario, is spending a holiday at Atlantic City.

J. H. McLEOD, president of Royalite Oil Company, has returned to Calgary, Alberta, from a trip to Toronto.

JOSEPH IRWIN, oil geologist, of Calgary, who recently returned from a trip to British Columbia, is visiting the Montana fields.

FERGUS McDONALD and WILLIAM HYNES, of Vancouver, British Columbia, recently visited Calgary, Alberta, in connection with oil development.

W. O. THOMPSON addressed the Rocky Mountain Association of Petroleum Geologists at Denver, Colo., on "Original Structures in Various Kinds of Sandstones."

COL. VICTOR SPENCER, of Vancouver, British Columbia, well known in the Alberta oil industry, has been elected president of B. C. Nickel Mines, Ltd., of Vancouver.

GEORGE H. RAWLINGS and FRANCIS DAYMOND, of Chatham, Ontario, attended the annual meeting of Kent Oil & Gas Company at Ann Arbor, Mich., recently.

CAPT. A. A. NICHOLSON, personnel director of the Texas Corporation, New York, will be the guest speaker at the Oil Belt Safety Meeting to be held in Ranger, Tex., May 1.

J. A. WARREN, of the Kinney-Coastal Oil Company, of Denver, Colo., has returned to the Garland field in Wyoming to inspect experimental work being done on its No. 3 Government, recently completed as an oil well.

M. F. TURNER, representative for the Continental Supply Company, has been transferred to Monahans, Tex., to become store manager. FRANK N. SLANK, formerly store manager at Monahans, has been transferred to Laramie, Wyo., where he will manage a store for the company.

The Panhandle Geological Society, headed by JOHN E. GALLEY, district geologist for the Shell Petroleum Corporation, will celebrate its tenth anniversary at Amarillo, Tex., on April 24. GENTRY KIDD, Stanolind Oil & Gas Company geologist, Pampa, Tex., is vice president and DANA SECOR of Pampa, Tex., Skelly Oil Co., is secretary.

ROY A. SILENT, of Los Angeles, Calif., was elected chairman at the spring meeting of the Pacific Coast district of the American Petroleum Institute division of production, L. L. AUBERT, vice chairman for Los Angeles Basin; W. L. BAGBY, of Ventura, vice chairman for the coastal district, and LLOYD WILLIAMSON, of Fellows, vice chairman for the San Joaquin Valley area. W. G. COREY, of Los Angeles, was elected treasurer and D. L. KILGOUR, of Los Angeles, elected secretary.

I. F. KORNEENKOV, vice president and chief engineer of Maineft, at Neftegorsk, Baku, U.S.S.R., has been on a tour of the Mid-Continent fields.

NEAL H. ANDERSON, former California oil umpire and prominent independent oil producer, has gone into the cattle raising business, his initial step having recently been undertaken in the Santa Maria Valley of California.

GEORGE O. SUMAN, of the Associated Oil Company, has been appointed superintendent of the company's San Joaquin Valley division of development and production and will have F. M. WATKINS as assistant superintendent.

H. E. WORMHOUDT has been elected vice president of the Cushman-Wilson Oil Company of Des Moines, Iowa. Mr. Wormhoudt for 25 years was connected with the Manhattan Oil Company of Kansas City and later was vice president and general manager of the Mona Motor Oil Company of Council Bluffs, Iowa.

FERDINAND R. BAIN, who organized the Southern Counties Gas Company in 1911, was honored with a silver anniversary dinner at the Biltmore Hotel in Los Angeles, Calif., recently, commemorating completion of 25 years with the company. Mr. Bain is chairman of the board and FRANKLIN S. WADE, president of the company, and LEROY M. EDWARDS, general counsel, officiated as toastmasters for the occasion.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

W. H. (Billy) Cunningham, Beaumont, Tex., and Seth Ely, Tulsa, have organized the Cunningham Drilling Company.

William Henry Litzenberg, veteran agent of the People's Natural Gas Company, Pittsburgh, Pa., died in the home of his son-in-law, R. D. Beardsley, who later became treasurer of a group of Standard Oil gas companies.

Frank P. Peterson contributes an article in which he says concerning the gasoline outlook that the consumer "may hope to breathe freely for one or two more seasons before his purse must eventually feel the final call to meet the inevitable shortage."

The Lewiston (Idaho) Orchards Company now has in operation the first gasoline traction plow ever used in the Northwest. It harrows as it plows.

20 YEARS AGO

Under "Motor Trucks on Long Trips" an item says gasoline-driven trucks have been put into operation between New York and Philadelphia. This undertaking, if profitable, is expected to be the nucleus for similar enterprises.

California oil men are donning buttons bearing the slogan, "Dollar Oil."

Eastern papers printing stories that oil men and others in dry Oklahoma, denied alcoholic excitement, are acquiring "gasoline jags" by sniffing fumes of gasoline.

10 YEARS AGO

The Magnolia Petroleum Company will replace six of its cracking stills with four made from German cannon, taken in the World War, the metal being specially suitable for high temperatures and pressures.

Oil geological exploration in Iraq is to begin soon, according to Walter C. Teagle on his return from Europe. The field is a "prospect," Mr. Teagle said.

Negotiations are under way looking to merger of Atlantic Refining Company and Marland Oil Company.

R. C. DECKSTROM, assistant Oklahoma state supervisor of the minerals survey, was in Guymon, Okla., the past week making arrangements for a survey of the Oklahoma Panhandle district.

F. P. THIEMAN, formerly with the Continental Supply Company in charge of machinery sales in Oklahoma and Kansas, has joined the United Supply & Manufacturing Company, Tulsa, as vice president.

HUGH A. STEWART, manager of the producing department of the Rocky Mountain division of the Texas Company, addressed the Rocky Mountain Association of Petroleum Geologists in Denver, Colo., on "Some Ideas of Unitization."

GEORGE WITTMER III, Wittmer Oil & Gas Company, Pittsburgh, Pa., was elected president of the Independent Gas Producers Association of Ohio for the ensuing year. ROBERT LEWIS, of Rochester, N. Y., and Barnesville, Ohio, was elected vice president.

T. B. SCOTT, JR., was chairman of a special committee of Carter Oil Company executives who recently made a series of inspection trips to the company's field properties. Other members of the committee were L. S. COLLINS, F. W. FLOYD, IVAN L. WILLIS, and J. R. FREEMAN.

B. M. HEATH, of the Carter Oil Company accounting department, has been transferred from the Tulsa office to the Seminole district office; CECIL G. STEWART has been transferred to the Keokuk office; CHARLES E. CHAPPELL has been transferred to the Fitts gasoline plant, and GUS L. SANDERS has been assigned to field duty in the Seminole area.

PARAGRAPHS

JOHN WATSON, land man for the Sinclair Prairie Oil Company at Shawnee, Okla., is convalescing at the Mayo Hospital in Rochester, Minn., after an operation.

J. H. S. BONNER, president of the Bonner Company, of Wichita Falls, Tex., who formerly operated in the Fort Collins district in Colorado, is in Denver, Colo, on business.

AMOS BALL, general sales manager of the Standard Oil Company (Indiana) of Chicago; H. A. LEWIS, assistant sales manager, and staff of assistants, were in Denver, Colo., the past week.

K. A. MILLER, Shell Petroleum Corporation, St. Louis, Mo., has been appointed member of the American Petroleum Institute committee on disposal of marketing wastes to succeed W. H. WEBER, resigned.

R. O. CAMPBELL, British-American Oil Refineries, Ltd., Toronto, Canada, has been appointed member of the American Petroleum Institute committee on testing methods and specifications to succeed D. W. MONROE, resigned.

RUDOLPH F. WEICHERT has been promoted from observer to chief of party No. 1 of the Carter Oil Company geophysical department. RAYMOND W. DUDLEY was advanced from attached helper to student computer, and HERMAN J. WIRZ from attached helper to student observer.

FRED MANNING, president of Manning & Martin, Inc., is back at Denver, Colo., headquarters from a business trip to Montana.

HOWARD PARSLEY, of Marathon Oil Company, Tulsa, went to New York the past week to compete in the A.A.U. swimming meet as a member of the Tulsa Y.M.C.A. team.

W. F. BURDELL, a director of Pure Oil Company for 22 years, has resigned. He was succeeded by JOHN H. McCOY, president of the City National Bank & Trust Company.

R. B. COOK and R. M. STEWART have been appointed co-editors of the Marathon Runner, publication of the Marathon Oil Company Employes Club, by C. B. SIMON, president.

H. HOECKER, secretary of Canadian Oil Companies, Ltd., of Toronto, Ontario, with J. LITTLE and J. BIDNER, of the Toronto office, visited the company's refinery at Petrolia, Ontario, recently.

WALLACE LEE, with the U. S. Geological Survey at Wichita, Kans., read a paper on "The Mississippian of Southeastern Kansas," at the meeting of the Kansas Geological Society in Wichita, April 15.

MARTIN & MANNING, INC., drilling contractors of Denver, Colo., and Tulsa, will receive within the next few weeks a new airplane, especially built for the firm with 450-horsepower capacity for use in the firm's widespread operations. The firm has contracts in Cut Bank, Mont., Quealy field in Wyoming, and other Rocky Mountain states in addition to its operations in the Mid-Continent and the plane will facilitate transportation.

J. R. BRAYMER, in the production department of the Phillips Petroleum Company, was recently transferred from the Wichita, Kans., office to Bartlesville, Okla., as junior petroleum engineer.

L. C. BURROUGHS, Shell Petroleum Corporation, Norco, La., has been appointed member of the American Petroleum Institute committee on disposal of refinery wastes to succeed B. R. CARNEY, resigned.

E. M. CONVERSE, vice president of the Dearborn Chemical Company, Chicago, delivered an address before the Panhandle chapter of the American Petroleum Institute at Pampa, Tex., April 14. His subject was "Corrosion Problems in the Oil Industry and Fundamentals of Protection."

WILLIAM D. LOUCKS, chairman of the board, and JAMES A. DUNN, vice president and secretary of New York and R. A. BROOMFIELD, executive vice president of the Barnsdall Oil Company, Los Angeles, visited the Tulsa offices of the company last week. While in Tulsa they inspected the properties of the company now being developed in the Oklahoma City field.

COL. J. F. DRAKE, president of the Gulf Oil Corporation, has returned to the Pittsburgh, Pa., headquarters following an inspection trip of the Mid-Continent and Gulf Coast properties of the Gulf interests. Accompanied by local Gulf executives he visited offices and fields in Oklahoma, Texas and New Mexico where the Gulf corporation is interested.

PREBEN OLDENBURG, formerly with the Shell Petroleum Corporation in West Texas, is now in the engineering department of the California Company at Midland, Tex. T. A. POLLARD, graduate of University of Texas in 1935, is now in the engineering department of the company at Midland. H. W. MATTHEWS, petroleum engineer, has been transferred from the Midland office to the Yates field and JOE BALLANFONTE has been placed in charge of drilling in the Ward field, also doing engineering work there.

Surely Was High-born

There's at least one distinction which nobody can take away from H. A. Stewart, to-wit: He was high-born. One and a half miles above sea-level, in Aspen, Colo., if you like particulars. It will be recalled that Aspen, with its rich silver and lead mines, was famous as a mining camp back in the early eighties. Its roistering days were over long ago, of course, and it is now the more or less sedate county-seat of Pitkin County.

H. A. STEWART

Mr. Stewart, who recently was appointed an assistant division manager of the Texas Company's producing department, in charge of the company's production activities in the Rocky Mountain area, has passed virtually all his business and professional life in the state in which he was born and reared. He received his technical education in the Colorado School of Mines, Golden, Colo. He entered the service of the Texas Production Company, producing subsidiary of the Texas Company in the Rocky Mountain territory, March 1, 1923, as geologist and head of the land department in Wyoming. Two years later he was advanced to chief geologist in Colorado. When the Texas Company created its Rocky Mountain division in 1930 he was placed in charge of the land and geological departments. Mr. and Mrs. Stewart, who have three children, reside in Denver.

FRED WINGER, assistant superintendent for the California Company at Midland, Tex., is on vacation at Hot Springs, Ark.

D. J. CLUTTERBUCK of Beaumont, Tex., has been assigned to the insurance department of the Stanolind Oil & Gas Company at Fort Worth, Tex.

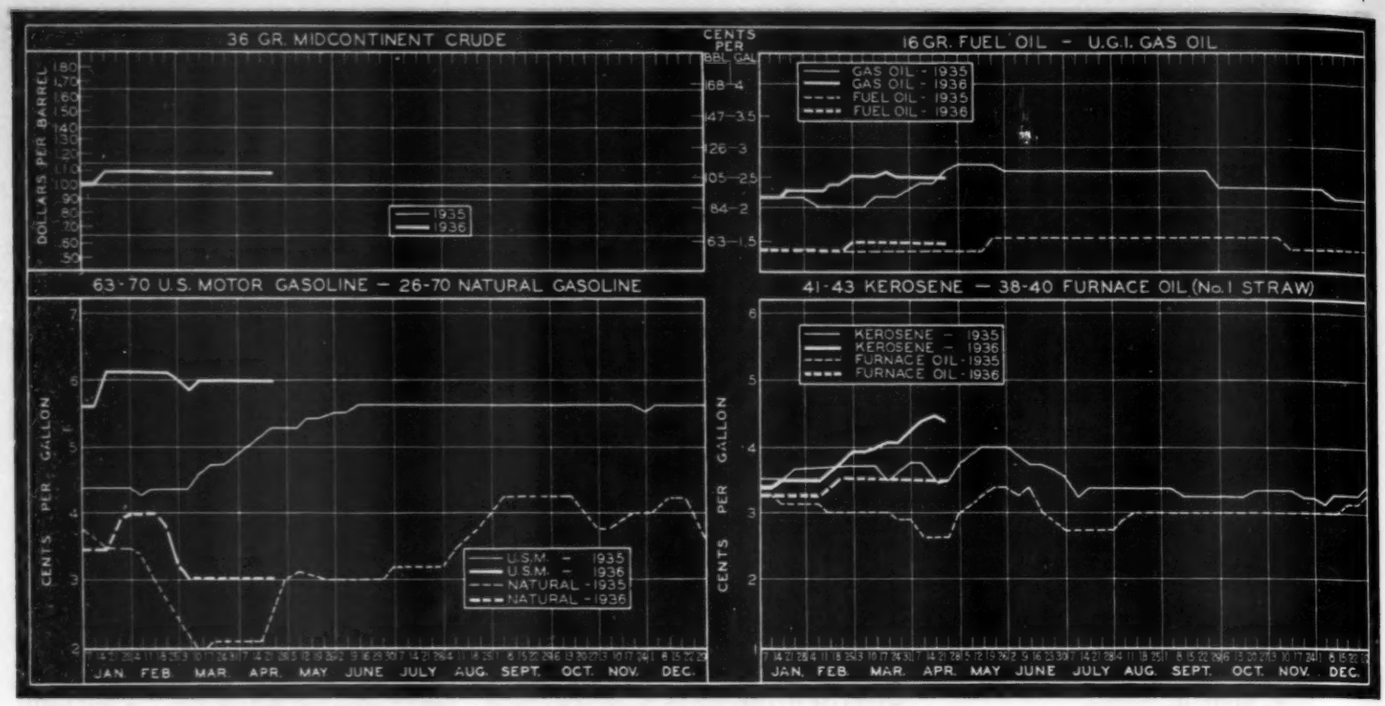
KENNETH G. PEARCE, petroleum engineer for Carter Oil Company at the South Burbank Unit C-42 office, has been transferred to the Tulsa office.

C. L. STEWART, with the Humble Pipe Line Company at McCamey, Tex., and MISS BEULAH BATES, with the Humble Oil & Refining Company at Midland, Tex., were married at Brownfield, Tex., on April 12.

O. L. PAISLEY, for 25 years distributor for Imperial Oil, Ltd., at Clinton, Ontario, has retired on pension. When he started work for the company kerosene was the only product and a horse-drawn wagon tank handled the distribution.

ROBERT G. TAYLOR, president of the Wyoming Southern Oil Company, of Douglas and Cheyenne, Wyo., was a Denver, Colo., visitor. He says several wells probably will be drilled in the Shawnee district in Converse County, Wyoming, this year.

GEORGE WILLOUGHBY, vice president of the White Star Refining Company, Ltd., assisted by R. J. McDOWELL, D. H. MUSSELMAN and FRED SEVERN, conducted a series of dealer conferences early in April at Windsor, Hamilton, Kitchener, London and other Ontario points.



Group 3 Gasoline Stocks Expected to Melt Fast Under Summer Demand

By T. F. SMILEY

The key to the Group 3 gasoline market is in the hands of the weather man. Whether immense inventories of motor fuel, accumulated as the result of sundry adverse conditions, can be absorbed in the next five months, leaving refiners with their tanks virtually empty at the close of the heavy consuming season, as they should be, depends definitely upon the motoring public. The family car will be kept busy if skies and temperature are right.

Retail markets continued shaky this week. Added to other untoward factors was a drop of a quarter cent in the price of Texas natural gasoline. Since the natural market has an influence on the refined market, this sinking of Texas quotations was looked upon as increasing the difficulties of the latter at this juncture. Rumors of under-cover rebates by dealers were common. Fears were expressed that weakness in the retail end would extend to jobber and refinery business.

Motoring Weather Needed

As a whole, however, sentiment in the trade was hopeful. Belief seemed to be general that a few days of fine motoring weather would change the entire aspect. So deep was confidence the summer of 1936 would witness record-breaking consumption of motor fuel that the unprecedented size of gasoline stocks in storage caused relatively little concern. It was declared the huge excess inventories would melt rapidly once the touring season got really under way. News that crude stocks had begun to drop provided encouragement.

Conservative observers pointed out danger that lay in overconfidence. They attributed to it the failure of refiners, especially large integrated companies, to reduce their runs to stills more nearly in line with current demand. It was estimated this week that finished and unfinished gasoline in the United States was in the neighborhood of 9,000,000 bbls. above the level recorded at this time last year. At the close of March the estimate was 8,000,000. In the face of this enormous surplus runs to stills have been stepped up.

Tending to relieve the motor fuel picture of some of its darker shadows are figures showing that the interior market has been moving slowly but steadily into a better position. For example, stocks in Oklahoma, Kansas and Missouri reached a peak of 8,034,000 bbls. March 7. Since then they have declined to 7,705,000, a drop of 329,000. Inland Texas stocks touched a high of 1,927,000 bbls. March 14. They have gone down to 1,733,000 bbls., a decrease of 194,000. North Louisiana and Arkansas stocks have dropped 19,000 bbls. since they hit their peak of 410,000 bbls. March 7. Stocks in the Mid-Continent territory alone are about 2,000,000 bbls. higher than they were a year ago.

Most of the smaller refiners in the Mid-Continent report good business, few of them having any large surplus stocks to be taken off their hands by majors endeavoring to prevent distress material from being dumped on the market.

Natural Gasoline Off

The recession of a quarter-cent in quotations on natural gasoline in North Texas was no surprise. Whether Oklahoma prices would step down alongside them was a subject of speculation. The market in both areas has been soft for weeks. In explanation of the mark-down it was said that storage of material for fall blending had reached a point where little more could be absorbed in that way. Better jobber buying was expected to follow the lowered prices. Buying for fall blending usually starts in June.

Kerosene from the Texas Gulf Coast came into competition with Oklahoma material in the last week, taking a little of the edge off the market. Demand was described as brisk, however. Prime white distillate was tighter. Less of it is being made since the demand for it as a heating oil has subsided. At the same time substantial quantities are being bought for use as tractor fuel, many of the early machines having been designed to operate on it. The more modern models have higher compression engines and use a fuel not dissimilar to the ordinary third-grade gasoline.

Bright stocks, which had been showing signs of strength, were commanding a half-cent more than last week, and assertions were made that a further raise was not unlikely. Neutrals were firm. Wax was still weak.

Refined Oil Market Barometer

Interest centers largely upon disposition of unprecedentedly large gasoline stocks. Markets in most areas east of the Rockies are unsettled. Good motoring conditions are expected to set off a record-breaking gasoline season, with probable absorption of burdensome inventories. Restrictions of runs to stills is needed. Recession of crude stocks for the first time since February affords a hopeful sign.

MID-CONTINENT. Refinery and natural gasoline weak. Tractor fuel brisk. Bright stocks up.

EAST COAST. Eagerness for gallonage injecting unsteadiness into gasoline market.

GULF COAST. Gasoline slightly off. Kerosene tight. Burning oils weak.

PENNSYLVANIA. Bright and cylinder stocks strong. Neutrals firming.

CALIFORNIA. Refinery and natural gasoline up. General market firm.

CHICAGO. Gasoline firmer. Lubricants strong.

Tank-wagon and Service Station Prices Hold Steady in East, Except Boston

NEW YORK, Apr. 20.—Tank-wagon and service station gasoline prices held steady along the Atlantic seaboard during the past week with the single exception of Boston, where quotations were cut one-half cent. The undertone of the general market continues unsettled, due to a gradually increasing tendency in some of the heavy consuming centers for marketers to go after gallonage at the expense of profits.

This situation may be traced in part to the existence of heavy stocks at bulk terminals and service stations and continued bad weather that has prevented jobbers and retailers from moving their inventories as rapidly as expected. With another unfavorable week-end, the situation is more apt to become aggrevated, rather than to improve.

It would not be in order yet to predict a general lowering of tank-wagon prices in this territory. A favorable turn in the weather, long overdue, could help the situation materially, and the larger marketers are not anxious to force their stocks of motor fuel into consumption at a sacrifice at this stage, with the best consuming season just ahead. Furthermore, stocks are in strong hands, generally speaking. The fact remains price structure might be unfavorably affected should the position of the trade not improve within the next few weeks.

Shipments of gasoline by tanker and tankcar from the Mid-Continent into the eastern territory have increased substantially during the past week or two. Some of this material is undoubtedly in the cut-price category, and explains to some extent the weakness in market prices in certain localities. This influx of western gasoline has more than offset the reduction in output on the part of Atlantic seaboard refiners, who have actually cut their runs of crude petroleum from 77 per cent in March to below 70 per cent at the present time. Current runs are also substantially below those of a year ago.

Some of the eastern jobbers have been basing their future commitments on the recent optimistic tone of the Mid-Continent market and the increased pressure on this market from that source, while not yet of alarming proportions, has proved anything but reassuring to them. In view of the bad weather recently, they take pains to emphasize that the eastern market is not at the present time a particularly good one in which to dispose of surplus material. It is considered possible reports of flood damage to motor fuel storage tanks created the impression in the Southwest that this market was short of gasoline. That patently is not the case.

As against the not too favorable immediate situation in the gasoline market, there is a growing feeling on the part of eastern commodity experts that a new wave of commodity inflation may be in the offing. If there is anything substantial back of this, it would probably be eventually reflected in a demand for motor fuel above expectations and higher prices. Wheat recently reached the highest price for 1936 yet recorded. Considerations of this character are no doubt recognized in the calculations of some marketers, and if so these undoubtedly would not regard the large stocks of motor fuel now on hand with too much disfavor.

There is little of interest to report in the kerosene and furnace oil markets. Prices have shown a steadier tendency during the past week at the lower levels previously reported. This is partly due to abnormally cold weather throughout this territory, with freezing temperatures and a little snow in some sections of the north Atlantic area, which have been reflected in increased shipments compared with late in March.

Industrial fuels and diesel oils for domestic and marine consumption have also held firm. In some quarters higher bunker fuel oil quotations are anticipated within the next few weeks.

Strength in Pennsylvania lubricating oils continues to be one of the features of the eastern petroleum markets, another advance in cylinder stocks having been recorded during the past week. This is attributed not only to a better demand but also improved refining methods. A new refining plant of substantial capacity is expected to be constructed at Olean, N. Y., to run on Pennsylvania oil by Socony Vacuum Oil Co., this being regarded as one indication of renewed interest in these oils on the part of the larger companies.

Dullness continues to prevail in the Gulf Coast export markets, with prices for gasoline unchanged. The clouded political situation in Europe is a dominating factor and prospects of a change for the better do not appear bright.

The strength exhibited by the export market for Pennsylvania lubricants reflects the domestic situation more than anything else. During the past week cylinder stocks were raised another half cent, bringing 600 Warren E, f.a.s. New York, in barrels, to 21-21½ cents; 600 steam refined, unfiltered, to 19-19½ cents, and 650 steam refined, unfiltered, to 19½-20. Bright stocks were also advanced one-half cent to 26½ cents per gallon for 8 color and 26 cents for 6½ plus color in dilution. Steam refined oils of 600 and 630 flash and Pennsylvania neutral oils remained unchanged.

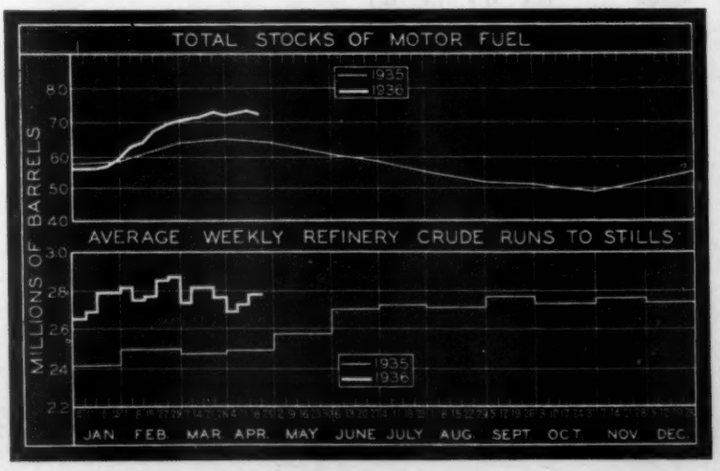
Refined paraffin wax prices for export are steady. Crude scale wax of 124-126 w.s. has been advanced two-tenths of a cent per pound to 2.60-2.70 cents. While some factors in the trade recently advanced refined wax prices, the advance has not yet become general.

A. P. I. Weekly Refinery Statistics

Week Ending April 18, 1936

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	456,000	20,021,000	6,717,000
Appalachian	94.8	103,000	2,805,000	482,000
Indiana, Illinois, Kentucky	95.9	391,000	11,660,000	2,927,000
Oklahoma, Kansas, Missouri	84.8	278,000	7,623,000	2,414,000
Inland Texas	48.5	99,000	1,754,000	1,502,000
Texas Gulf	96.8	575,000	8,381,000	6,487,000
Louisiana Gulf	96.4	118,000	1,944,000	2,028,000
North Louisiana and Arkansas	90.0	50,000	416,000	307,000
Rocky Mountains	61.9	46,000	1,710,000	738,000
California	92.6	486,000	12,575,000	71,245,000
Total reported	89.6	2,602,000	68,889,000	94,847,000
Estimated unreported	.....	193,000	4,126,000	1,907,000
*Estimated total	.....	2,795,000	73,015,000	96,754,000
*Estimated total previous week	.....	2,755,000	73,654,000	96,508,000
†April 30, 1935	.....	2,502,000	64,393,000	97,727,000

*Bureau of Mines basis currently estimated. †Monthly report, U. S. Bureau of Mines.



Proposed Consolidation of Oil Companies on West Coast

A plan of reorganization for the Richfield Oil Co. of California and the Pan American Petroleum Co. now in receivership through a consolidation with the Rio Grande Oil Co. was presented last week by Harry F. Sinclair, chairman of the executive committee of the Consolidated Oil Corp. The reorganization plan was offered following refusal to pay $29,655,510, the minimum price set by the court for the Richfield and Pan American properties.

Under the new plan, bond and other security holders in the Pan American and Richfield companies would receive common stock in the new company which probably would bear the Richfield name. Present holders of Rio Grande stock would receive stock in the new company.

It was explained that if this plan is approved ample funds will be available to expand and round out the operations of the new company so that it would be one of the strongest integrated units on the West Coast. The Rio Grande company is controlled by the Sinclair interests. The Cities Service Co., which is the main holder of Richfield bonds and stocks, is also interested as a stockholder in the Rio Grande company. The company has production, refining and marketing facilities as has the Richfield company. It is expected that some time will be required to work out the details of this reorganization.

C. A. Prichard, purchasing agent for Mid-Continent Petroleum Corp., Tulsa, is on a two weeks' vacation in Kansas City, Mo.

H. E. Perkins, southwestern department sales manager for Tide Water Oil Co., outlined his company's summer sales program at a meeting of more than 75 Tide Water dealers and service station men in Tulsa last week.

RETAIL OIL MARKETS

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of April 21, 1936

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Discounts

Under the standard form of commercial consumer contract which went into effect March 1, 1934, save in California, Oregon, Washington, Arizona and Nevada, a discount of 1 cent a gallon off tank-wagon or 3 cents a gallon off retail prices is permitted for purchases between 4,000 and 10,000 gallons per month, or 4 cents a gallon off retail prices for purchases in lots of more than 10,000 gallons a month. The minimum delivery is 25 gallons.

Standard Oil Co. (Indiana)

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Chicago	16.0	17.0	4.0	10.1
Decatur, Ill.	16.0	18.0	4.0	10.1
E. St. Louis	15.7	17.7	4.0	9.8
Joliet	16.0	16.5	4.0	10.1
Peoria	16.0	18.0	4.0	10.1
Quincy	15.8	17.8	4.0	9.9
Davenport, Ia.	16.0	(†)	4.0	10.1
Des Moines	15.8	(†)	4.0	9.9
Mason City	16.2	(†)	4.0	10.3
Sioux City	16.0	(†)	4.0	10.1
Duluth, Minn.	16.8	18.8	4.0	10.9
Mankato	16.4	18.4	4.0	10.5
Minneapolis	16.4	18.4	4.0	10.5
LaCrosse, Wis.	17.4	19.4	5.0	10.5
Green Bay	17.7	19.7	5.0	10.8
Milwaukee	16.3	18.3	5.0	10.4
Madison	17.4	19.4	5.0	10.5
Detroit, Mich.	14.0	16.0	4.0	8.3
Grand Rapids	16.4	18.4	4.0	9.3
Saginaw	16.6	18.6	4.0	9.6
Evansville, Ind.	17.7	19.7	5.0	10.6
Indianapolis	17.9	19.9	5.0	10.8
South Bend	18.1	20.1	5.0	11.0
Fargo, N. Dak.	17.4	19.4	4.0	11.5
Huron, S. Dak.	17.9	19.9	5.0	11.0
Sioux Falls	17.4	19.4	5.0	10.5
Kans. City, Mo.*	15.4	17.4	4.0	9.5
Springfield	15.1	17.1	4.0	9.2
St. Louis	15.7	17.7	4.0	9.8
St. Joseph*	15.4	17.4	4.0	9.5
Wichita, Kans.	16.9	16.9	4.0	7.1
Bartlesville, Ok.	15.0	19.0	5.0	8.5

*State tax 2 cents, 1-cent city tax and 1-cent federal tax.

†Standard Oil Co. (Indiana) has leased all service stations in Iowa.

Discounts to dealers except in Iowa: 2½ cents on premium and regular and 2¾ cents on third grade off service station prices; discounts to dealers in metropolitan Chicago one-half cent larger than rest of Standard of Indiana territory, namely 4 cents and 3 cents on respective grades. Dealers in Iowa sold at posted "Dealer Prices."

Stanolex Fuel Oil in Chicago

Effective February 16, 1936, f.o.b. Chicago tank-wagon prices: Range oil, less than 100 gallons, 8.75 cents; 100-149 gallons, 7.75 cents; 150 gallons and more, 7.25 cents. 1 (36-40 lt. stw. zero), less than 100 gallons, 8.75 cents; 100-149 gallons, 7.75 cents; 150 gallons or more, 7.25 cents; No. 2, (22-26 zero), less than 150 gallons, 7.5 cents; 150 gallons or more, 6.5 cents; No. 4 (12-16 zero), less than 400 gallons, 7.5 cents; 400 gallons or more, 6.5 cents, viscosity of No. 4, 85° and 100° F.; No. 5, less than 400 gallons, 5.75 cents; 400 gallons or more, 4.75 cents.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Denver, Colo.	17.0	19.0	5.0	11.6
Pueblo	17.0	19.0	5.0	13.0
Grand Junction	21.5	23.5	5.0	15.0
Casper, Wyo.	19.5	21.5	5.0	11.5
Cheyenne	19.5	21.5	5.0	13.0
Butte, Mont.	22.0	....	6.0	14.5
Billings	22.5	24.5	6.0	14.5
Helena	22.5	24.5	6.0	17.5
Great Falls	22.5	24.5	6.0	14.5
Salt Lake, Utah	21.0	23.0	5.0	16.0
Twin Falls, Ida.	23.0	25.0	6.0	15.0
Boise	22.5	24.5	6.0	15.0
Albu'que, N. M.	18.5	20.5	*6.5	13.0

*Includes one-half cent city tax.

Discount to dealers with or without contract in Continental territory: Undivided dealer discount off service station price, 4 cents; divided dealer accounts, 3½ cents.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Atlanta, Ga.	20.5	22.5	7.0	*12.5
Augusta	20.0	22.0	7.0	*13.0
Macon	20.0	22.0	7.0	*14.5
Savannah	18.5	20.5	7.0	*13.0
Birm'ham, Ala.	21.0	23.0	8.0	12.0
Mobile	21.0	23.0	8.0	10.0
Montgomery	22.0	24.0	9.0	14.5
Jackson, Miss.	20.0	22.0	7.0	*13.0
Vicksburg	19.5	21.5	7.0	*13.0
Jacksonville, Fla.	18.0	20.0	8.0	12.0
Miami	19.5	21.5	8.0	13.5
Pensacola	21.5	23.5	9.0	12.0
Tampa	18.0	20.0	8.0	13.5
Lexington, Ky.	19.0	21.0	6.0	11.0
Covington	18.5	20.5	6.0	10.5
Louisville	19.0	21.0	6.0	10.0
Paducah	18.0	19.0	6.0	8.5

*Includes 1 cent state tax. Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile and Birmingham, Ala., each have a city gasoline tax of 1 cent per gallon. Pensacola, Fla., has a city gasoline tax of 1 cent.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
San Francisco	17.0	18.0	4.0	11.5
Los Angeles	16.5	17.5	4.0	9.0
Fresno, Calif.	17.5	18.5	4.0	11.5
Phoenix, Ariz.	21.0	22.0	6.0	‡16.0
Reno, Nev.	19.5	20.5	5.0	13.0
Portland, Ore.	19.5	20.5	6.0	13.5
Seattle, Wash.	19.5	20.5	6.0	13.5
Tacoma	19.5	20.5	6.0	13.5
Spokane	22.5	23.5	8.0	16.5

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Prices are at company's plant or depots, as company does not operate stations. A 4 cent per gallon discount is given dealers and customers taking tank-wagon lots except in Phoenix where discount is 1 cent.

‡Includes 5-cent state tax.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Atl'tic City, N.J.	14.3	17.8	4.0	9.0
Newark	14.3	17.8	4.0	7.5
Annapolis, Md.	15.6	19.1	5.0	10.0
Baltimore	15.0	18.5	5.0	8.0
Cumberland	16.6	20.1	5.0	12.7
Wash'g'n, D. C.	13.0	16.5	3.0	9.0
Danville, Va.	17.5	21.0	6.0	12.9
Norfolk	16.0	19.5	6.0	11.2
Petersburg	16.5	20.0	6.0	11.7
Richmond	16.5	20.0	6.0	11.7
Roanoke	17.5	21.0	6.0	12.9
Charles'n, W.Va.	15.8	19.3	5.0	12.6
Parkersburg	15.1	18.6	5.0	11.2
Wheeling	16.0	19.5	5.0	12.2
Charlotte, N. C.	18.7	22.2	7.0	12.4
Hickory	19.0	22.5	7.0	13.1
Mt. Airy	19.0	22.5	7.0	13.2
Raleigh	18.4	21.9	7.0	12.7
Salisbury	18.8	22.3	7.0	13.0
Charleston, S. C.	17.0	20.5	7.0	11.3
Columbia	18.3	21.8	7.0	12.4
Spartanburg	18.7	22.2	7.0	12.9

Tank-wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at regular price less one-half cent. Discount for kerosene, 1 cent off tank wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except in New Jersey, where no discount (if necessary) is given.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Omaha	18.4	20.4	6.0	10.4
McCook	19.1	21.1	6.0	11.1
Norfolk	18.8	20.8	6.0	10.8
North Platte	19.2	21.2	6.0	11.2
Scottsbluff	19.9	21.9	6.0	11.9

Note: Discounts to dealers: where service station gasoline prices are (maximum overall, including rent) as follows: Reliance, 2¾ cents; Standard Red Crown, 3½ cents; Red Crown Ethyl, 3½ cents.

Where service station gasoline prices are below normal resellers' allowances are reduced one-half of the amount below normal, down to the following (minimum overall, including rent): Reliance, 2 cents; Standard Red Crown, 3 cents; Red Crown Ethyl, 3 cents. Discounts to consumers for tank-wagon deliveries covered only by Standard Commercial Consumers Contract, effective January 1, 1935.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Philadelphia, Pa.	17.0	19.0	5.0	9.5
Pittsburgh	17.5	17.5	5.0	10.0
Allentown	17.0	19.0	5.0	9.5
Erie	16.5	16.5	5.0	9.0
Scranton	16.75	16.0	5.0	10.0
Altoona	17.5	19.5	5.0	9.5
Dover, Del.	17.0	17.0	5.0	10.0
Wilmington	16.5	16.5	5.0	9.5
Springf'ld, Mass.	14.0	17.5	4.0	7.5
Worcester	13.5	17.0	4.0	7.75
New Haven	13.0	16.5	4.0	7.5
Provdence, R. I.	13.0	15.5	3.0	7.25

Note—Tank-wagon prices are those applicable to consumers purchasing lots of 100 or more gallons in one delivery.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
N. Orleans, La.	18.5	22.0	‡9.0	12.0
Baton Rouge	17.5	21.0	†7.0	11.5
Alexandria	18.5	22.0	†*8.0	11.0
Lafayette	19.0	22.5	†*8.0	12.5
Lake Charles	19.0	22.5	†*8.0	11.0
Shreveport	17.0	20.5	†7.0	11.0
Knoxville, Tenn.	21.0	24.5	8.0	14.0
Memphis	19.0	22.5	8.0	11.0
Chattanooga	20.5	24.0	8.0	11.5
Nashville	20.0	23.5	8.0	10.0
Bristol	18.75	21.5	8.0	14.5

*Includes city tax of 1 cent.

†Includes 1-cent parish tax. ‡Includes 3-cent parish tax.

Tank-wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at dealer price less one-half cent.

Louisiana kerosene prices include 1-cent state tax.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline: Post deal	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Albany, N. Y.	14.0	17.5	5.0	7.75
*Met. N. Y.:				
Manhtn., Bronx	14.2	19.2	5.0	7.25
Staten Island	14.2	19.2	5.0	7.25
Qu'ns & Br'klyn	14.2	19.2	5.0	7.25
Buffalo	14.5	18.0	5.0	8.25
Rochester	14.5	18.0	5.0	8.25
Syracuse	14.5	18.0	5.0	8.75
Boston, Mass.	12.5	16.0	4.0	7.5
Portland, Me.	14.5	18.0	5.0	7.75
Manch'ter, N. H.	15.0	18.5	5.0	8.0
Burlington, Vt.	17.0	20.5	5.0	8.75
Hartford, Conn.	14.5	18.0	4.0	7.0

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Dallas, Tex.	14.0	18.0	5.0	8.5
Fort Worth	13.5	17.0	5.0	8.5
Houston	14.0	18.0	5.0	8.5
San Antonio	14.0	18.0	5.0	8.5
El Paso	15.0	19.0	5.0	10.0
Muskogee, Ok.	15.0	19.0	5.0	8.0
Okla. City	14.0	17.0	5.0	8.0
Tulsa	15.0	19.0	5.0	8.0
Ft. Smith, Ark.	15.5	19.0	5.0	8.0
Little Rock	18.0	21.5	7.5	9.5
Texarkana	14.5	18.5	5.0	8.5

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 154-gallon lots if covered by contract.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Ohio points	17.5	19.5	5.0	*13.5

*Includes state tax of 1 cent.

Canada*

Imperial 3-Star Gasoline
IMPERIAL OIL, LTD.

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Hamilton, Ont.	21.0	23.5	6.0	17.0
Toronto, Ont.	21.0	23.5	6.0	17.0
Brandon, Man.	30.8	33.7	7.0	23.3
Winnipeg, Man.	29.2	32.2	7.0	20.7
Regina, Sask.	30.5	33.5	7.0	23.0
Saskatoon, Sask.	33.3	36.3	7.0	24.8
Edmonton, Alta.	33.7	35.7	7.0	24.3
Calgary, Alta.	30.0	33.0	7.0	21.5
Vancouver, B. C.	26.0	29.0	7.0	24.0
Montreal, Que.	19.5	22.0	6.0	17.8
St. John, N. B.	25.0	29.0	8.0	19.5
Halifax, N. S.	25.0	29.0	8.0	19.5

*Imperial gallon used in Canada.

Discount to dealers: Divided dealers pay 3 cents per gallon below station price; undivided dealers pay 4 cents per gallon below station price except in cities of Hamilton, Toronto and Montreal where discounts below station price are one-half cent per gallon less.

Retail Price Changes

Standard Oil Co. (Indiana) April 15 advanced tank-wagon and station gasoline .5 cent in Chicago; March 30 reduced tank-wagon gasoline 2 cents and tank-wagon kerosene .3 cent in Bartlesville.

Socony-Vacuum Oil Co., Inc., April 16 reduced tank-wagon and station gasoline .5 cent in Boston.

Magnolia Petroleum Co. April 7 advanced tank-wagon and station gasoline 2 cents in El Paso. April 7 reduced tank-wagon and station gasoline 1 cent in El Paso; April 15 advanced tank-wagon gasoline .5 cents and station gasoline 1 cent in Houston; April 17 advanced tank-wagon gasoline .5 cents and station gasoline 1 cent in San Antonio.

R. C. Baker, president, Baker Oil Tools, Inc., Huntington Park, Calif., en route to the East Coast on a business trip, stopped off in Tulsa to confer with Paul McGivern, Oklahoma manager. Mr. Baker was accompanied by C. E. Whitney, sales manager.

J. H. Bevel is the new scout for Gulf Oil Corp. in western Kansas, succeeding John R. Parker, who has been assigned to special scouting work. Mr. Bevel, whose headquarters are in Great Bend, has been telegraph operator and map room man for the Gulf company at Wichita.

Harry F. Sinclair, chairman of the board, Consolidated Oil Corp., visited relatives and friends in Wichita, Kans., Sunday. He was en route to New York from California. He left by airplane for New York Monday, Mrs. Sinclair remaining in Wichita.

George P. Dickey, president of the Dickey Oil & Refining Co. and one of the more active Kansas operators, submitted to a blood transfusion last Saturday for his 7-year-old daughter, Myrna Sue, who was critically ill in a Wichita hospital. The child was weakened by two operations for appendicitis, necessitating the blood transfusion. Mr. Dickey was in western Kansas supervising drilling operations when informed of his daughter's serious illness.

PRICES OF REFINED PRODUCTS

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of April 21, 1936

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 octane and below	.05	.05½
63-67 octane	.05¾	.05⅞
68-70 octane	.06	.06¼
60-62 400 grades:		
62 octane and below	.05	.05¼
63-67 octane	.05¾	.05⅞
68-70 octane	.06	.06¼
64-66 375	.05½	.05⅝
68-70 360	.05¼	.05½

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.05	.05½
63-67 octane	.05¾	.05⅞
68-70 octane	.06	.06¼
60-62 400	.05	.05¼
64-66 375	.05¼	.05⅜

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U. S. Motor grades:		
62 octane and below		.05¾
63-67 octane		.06⅛
68-70 octane		.06¾
60-62 400	.05¾	.06

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:	
62 octane and below	.05¾
63-67 octane	.06⅛
68-70 octane	.06¾

CHICAGO (based on Group 3)—

U. S. Motor grades:		
62 octane and below	.05	.05½
63-67 octane	.05¾	.05⅞
68-70 octane	.06	.06¼
60-62 400 grades:		
62 octane and below	.05	.05¼
63-67 octane	.05¾	.05⅞
68-70 octane	.06	.06¼
64-66 375	.05½	.05⅝
68-70 360	.05¼	.05½

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:	
Below 60 octane	.05¾
60-64.9 octane	.07
65-70 octane	.07¼
64-66 375	.05¾
68-70 350	.06

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.05½	.06
58-60 400	.06¼	.06¾

EAST COAST—

U. S. Motor, below 60 octane:	
*New York (Bayonne)	.06¾
Baltimore	.06¾
U. S. Motor, 60-64.9 octane:	
*New York (Bayonne)	.07
Philadelphia	.07
Boston	.07
Baltimore	.06¾
Charleston, S. C.	.06¾
U. S. Motor, 65 and above:	
*New York (Bayonne)	.07⅛
Philadelphia	.07⅛
Boston	.07⅛
Baltimore	.07
Charleston, S. C.	.07

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05¾	.05⅞
60-64.9 octane		.06
65 octane and higher	.06⅛	.06⅛

Naphtha

PENNSYLVANIA (inland refineries)—

50-52 450 (blending)	.05⅛
52-54 450 (blending)	.05⅛
54-56 450 (blending)	.05⅝

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70	.03	.03⅛
Grade 18-55	.03¾	.04
Low vapor pressure grade:		
*14 lb. v.p. (max.)	.04⅛	.04¾
*12 lb. v.p. (max.)	.04¾	.05

*Nominal.

NORTH TEXAS—

Grade 26-70	.02¾
Grade 18-55	.03¼ .03½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70	.02¾

CALIFORNIA—

75-85 375-390	.05¼	.06

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr. 315-325 i.b.p., 110 flash, 540-550 e.p.	.04¼	.04⅜
41-43 gr., 300-350 i.b.p., 110-125 flash, 500-520 e.p.	.04¼	.04½
46-48 gr., 210-230 i.b.p., 480 max. e.p.		.05

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04⅜	.04⅝
42-44	.04½	.04⅝

NORTH TEXAS—

41-43	.04⅜	.04½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43	.04⅝

ARKANSAS (Ark., N. La., Miss. del.)—

41-43	.04⅝	.04⅝

PENNSYLVANIA (inland refineries)—

45	.05½
46	.05⅝
47	.05⅝

CHICAGO (based on Group 3)—

41-43	.04⅜	.04⅝
42-44	.04½	.04⅝

CALIFORNIA (Pac. Coast market)—

38-40 high burning test	.03½	.05

NEW YORK (Bayonne, N. J.)—

*41-43	.04⅜

GULF COAST (domestic)—

41-43	.03⅞

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

No. 1 prime white, 38-42	.03⅜	.04
No. 1 straw, 38-40	.03½	.03¾
No. 2 straw, 32-36	.03⅜	.03½
No. 2 dark, 32-36	.03¼	.03⅜
No. 3, 28-32	.03¼	.03¼
No. 3, 15 and above, 28-32	.02⅝	.02⅝

NORTH TEXAS—

No. 1 prime white, 38-42	.03⅝	.03¾
No. 1 straw, 38-40	.03½	.03⅝

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.03¼	.03½

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36	.03⅝	.03¾
No. 3, 28-32	.03¼	.03½

CHICAGO (based on Group 3)—

No. 1 prime white, 38-40	.03¾	.04
No. 1 straw, 38-40	.03½	.03¾
No. 2 straw, 32-36	.03⅜	.03⅝
No. 2 dark, 32-36	.03¼	.03⅝
No. 3, zero to 15, 28-32	.03¼	.03⅜
No. 3, 15 and above, 28-32	.02⅜	.02½

NEW YORK (Bayonne, N. J.)—

*No. 1	.04⅝
*No. 2	.04½
*No. 4	.04¼

*Barge deliveries one-eighth to one-fourth cent under above, tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02½	.02⅝
No. 4, 24-28	.92½	1.00
No. 4, 15 and above, 24-28	.77½	.82½
No. 5	.70	.75
No. 6	.65	.70
Below 18 fuel oil, industrial	.62½	.67½

NORTH TEXAS—

U.G.I. gas oil	.02½	.02⅝
No. 4, 24-28	.92½	1.00
No. 5	.70	.75
No. 6	.65	.70
Below 18 fuel oil, industrial	.62½	.67½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U.G.I. gas oil	.02⅞	.03
10-14 fuel oil, industrial	.70	.75

ARKANSAS (Ark., N. La., Miss. del.)—

10-14 fuel oil, industrial	.60	.65

CHICAGO (based on Group 3)—

U.G.I. gas oil	.02⅝	.02½
No. 4, 24-28	.95	1.00
No. 4, 15 and above, 24-28	.77½	.82½
No. 5, 18-22	.72½	.75
No. 6, 10-16	.62½	.67½

PENNSYLVANIA (inland refineries)—

36-40	.04¾	.04⅞

CALIFORNIA—

Los Angeles:		
30-34 gas oil, per bbl.	1.00	1.20
24 plus diesel	1.00	1.25
24 plus diesel (bunkers)	1.10	1.30
12-16 (bunkers at tidewater)	.85	.95
10-16 (cargo lots)	.80	.95
12-17 (tankcars)	.70	.95
San Joaquin Valley:		
10-18 (tankcars)	.65	.75
San Francisco:		
24 plus diesel, per bbl.	1.30	1.35
24 plus diesel (bunkers)		1.35
10-16 (bunkers)		1.00

GULF COAST—

28-30 gas oil	.03¼	.03⅜
28-30 diesel (bunkers)		1.50
Bunker (bulk cargoes)		.80
Bunker C (bunkers)		.90

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil	.04⅝
28-30 diesel (lighterage 6¾ plus per bbl.)	1.65
28-30 diesel (tankers)	.04½
*Bunker C (to ocean-going ships in N. Y. harbor)	1.05
Industrial fuel (tankcars)	.04

*Lighterage charge 5c bbl. additional.

Bright and Steam-Refined

OKLAHOMA (Group 3)—

Bright Stocks:		
190-200 D, 15-25		.20½
150-160 D, 0-10		.17½
150-160 D, 15-25		.17
150-160 E, 15-25		.16½
100-110 D, 0-10		.16
Steam refined:		
630 green (treated)		.10½
600 light green (untreated)		.09
600 dark green (untreated)	.06½	.07½

PENNSYLVANIA—

Bright Stocks (Pennsylvania grade, No. 8 color, 145-50 at 510; 540-550 flash):		
10 pour test	.23	.23½
15 pour test	.22	.22½
20 pour test	.21	.21½
25 pour test	.20	.20½
Steam refined:		
600	.11½	.12
650	.13	.13½
600 Pennsylvania flash	.14	.14½
630 flash	.17½	.18
600 Warren E filtered	.14	.14½

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:		
150-3		.10
180-3		.11¼
180-4		.10⅝
200-3		.11⅝
200-4		.11¼
250-3		.13⅝
250-4		.13¼
280-3		.14⅝
280-4		.14¼
300-3½		.15¼
400-3½		.16
100-2 paraffin oil		.05⅝
15-20 Cold Test:		
200-3		.10⅝
200-4		.10¼
240-3		.12⅝
240-4		.12¼
280-3		.13⅝
280-4		.13¼

GULF COAST—

Pale Oils:		
200-3	.07	.07½
300-3	.07½	.08
500-3½	.08½	.09
750-3½	.09	.09½
1,200-3½	.09½	.09¾
2,000-4	.09¾	.10
Red Oils:		
200-5-6	.07	.07¼
300-5-6	.07¼	.07½
500-5-6	.08	.08⅜
750	.08½	.09
1,200-5-6	.09	.09½

CALIFORNIA (moving to dom. market)

Pale Oils:		
100-2½-3	.06¾	.06⅞
200-2½-3	.06¾	.07
300-3-3½	.07	.07½
400-3-4	.09	.09½
450-3-4	.09¾	.10
550-3-4	.10	.10¼
600-3-4	.10¼	.10½
Red Oils:		
200-4-5	.06½	.06¾
300-5-6	.06¾	.07
350-5-6	.07	.07½
400-5-6	.08	.08¼
450-5-6	.08¼	.08⅜
500-5-6	.08½	.08¾
600-5-6½	.09	.09⅜
700-6½ plus	.09½	.10
750-6½ plus	.10	.10¼
900-6½ plus	.10¾	.10⅝

PENNSYLVANIA—

150 vis. at 70° F., color, 400-405 flash:		
Zero pour test	.18½	.19
10 pour test	.17½	.18
15 pour test	.17	.17½
25 pour test	.16	.16½
180 vis. at 70° F., 3 color:		
25 pour test	.19	.19½
200 vis. at 70° F., 3 color:		
Zero pour test	.22½	.23
10 pour test	.21½	.22
15 pour test	.21	.21½
25 pour test	.20	.20½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02¾

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0255	.0260
124-126 (a.m.p.) w.c. scale	.0260	.0265

NEW YORK—

Wax in bags fully refined:		
123-125 (a.m.p.) wax		.0445
125-127 (a.m.p.) wax		.0455
128-130 (a.m.p.) wax		.0480
130-132 (a.m.p.) wax		.0505
133-135 (a.m.p.) wax		.0535
135-137 (a.m.p.) wax		.0560
124-126 (a.m.p.) w.s.	.0240	.0250
124-126 (a.m.p.) y.s.	.0240	.0245
Petrolatum in barrels, carload lots:		
Dark green		.01¾
Amber	.02¾	.03
Extra amber	.03	.03½
Lily white	.06¾	.06¾
Snow white	.07¾	.07¾
Cream	.05¾	.05¾

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.05¾	.05½
60-62 400		.05½
61-63 390		.05¾
64-66 375		.05¾

LOS ANGELES—

U. S. Motor grades:		
53-55 octane		.04⅛
55-56 octane	.04½	.04⅝
65-67 octane	.04⅝	.04⅝
67-69 octane	.04¾	.05
Above 69 octane	.05	.05¼
65 and above 400 e.p.	.05¼	.05⅝

KEROSENE

GULF COAST—

41-43 prime white		.03⅝
41-43 water white		.04
44 water white		.04⅛

LOS ANGELES—

41-43 water white	.04¼	.04¾

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.b. in bbls.)—

Cylinder Stocks:		
600 Warren E	.21	.21½
600 S.R. unfiltered	.19	.19½
650 S.R. unfiltered	.19½	.20
600 flash S.R.	.20½	.21
630 flash S.R.	.23½	.24
Bright Stocks:		
8 color		.26½
6½ plus color in dilution		.26

NEUTRAL OIL

200-3 color	.26½	.27
150-3 color	.22½	.23

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 a.m.p.		.04125
125-127 a.m.p.		.0425
128-130 a.m.p.		.0450
123-135 a.m.p.		.0525
135-137 a.m.p.		.0550
Crude scale:		
124-126 w.s.	.0260	.0270
124-126 y.s.	.0240	.0245

CRUDE OIL PRICES

Oklahoma, Kansas, North Central and East Central Texas

(January 9, 1936)

East Texas*	$1.15
Van, Tex.†	1.02
Altus and Tipton, Okla.‡	1.08

Other fields (see gravity table).

*All companies. †Pure Oil Co. ‡Gypsy Oil Co.

West Texas

Crane, Upton, Howard, Glasscock and Mitchell Counties	$ .80
Winkler County	.85
Lea County, N. Mex.	.85
Pecos County*	.85
Pecos shallow†	.75

*Shell Petroleum Co., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Note—For Humble, Magnolia and Texas Co.'s West Texas and Lea County prices see gravity table. Above prices are those of other buyers.

Rocky Mountain States

(Effective January 9, 1936)

Iles, Colo., light*	$1.06
Iles, Colo., heavy*	1.00
Greybull, Wyo.*	1.38
Torchlight, Wyo.*	1.23
Grass Creek, Wyo., light*†	1.26
Grass Creek, Wyo., heavy*†	.72
Hamilton Dome, Wyo.*	.67
Elk Basin, Wyo., light*†	1.38
Frannie, Wyo., heavy*	.72
Frannie, Wyo., light (Feb. 24, 1936)*	.78
Hogback, N. Mex.*	1.31
Pondera, Mont.* (Jan. 29, 1936)	1.05
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†	1.11
Rock Creek, Wyo.†	1.12
Artesia, N. Mex. (Dec. 1, 1933)‡	.75
Maljamar, N. Mex. (Sept. 29, 1933)‡	.75
Fort Collins and Wellington, Colo.‡ (Jan. 9, 1936)	See Note
Florence, Colo.	.98
Lance Creek, Wyo.	.85
Lost Soldier, Wyo. (Sept. 30, 1933)	.85
Hudson, Wyo. (June 2, 1931)	.65
Sunburst, Mont.	1.35
Cat Creek, Mont.	1.28
Cut Bank, Mont. (May 23, 1934)	1.45

*Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co.

Note—Fort Collins and Wellington are not posted, price 5 cents under quotation of Salt Creek crude of like gravity (Fort Collins 36°; Wellington 33°). *Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co.

Southwest Texas

(January 9, 1936)

Saxet	$ .96
Mirando	.85
Pettus	1.35
Salt Flat*	.97
Salt Flat‡	.97
Darst Creek*	.97
Darst Creek†	.97
Luling	.90
Lytton Springs	1.00
Duval County	.85

*Humble Oil & Refining Co. †Magnolia Petroleum Co., Gulf Pipe Line Co. and Texas Co. ‡Shell Petroleum Corp. Saxet posted by Humble and Texas; Mirando by Humble and Magnolia; Pettus by Humble; Salt Flat by Humble; Luling and Lytton Springs by Magnolia; Duvall by Texas Co.

Middle Western States

OHIO OIL CO.

Lima (Jan. 10, 1936)	$1.25
Illinois (Jan. 9, 1936)	1.23
Princeton, Ind. (Jan. 9, 1936)	1.23
Midland, Mich. (Jan. 13, 1936)*	1.32
West Branch, Mich. (Jan. 14, 1936)	1.16
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River (Jan. 9, 1936)	1.30
Kentucky River (Jan. 9, 1936)	1.33
Western Kentucky (Jan. 9, 1936)	1.23

*Posted by Pure Oil Co. and Simrall Corp. and includes Greendale, Porter, Beaverton and Crystal crudes. West Branch, Mich., by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Oceana posted by Old Dutch Refining Co. and Naph-Sol Refining Co.

Gulf Coast

(January 9, 1936)

Cleveland, Tex.	$1.10
Hardin, Tex.	1.03
Greta, Tex.	.90
Refugio, Tex., heavy	.90
Tomball, Tex.	1.30
LaFitte, La.	1.12
Livingston, Tex.	1.15
Bosco, La. (Jan. 16, 1936)	1.05
Evangeline, La.	1.07
Welsh, La.	.96

Cleveland and Hardin by Magnolia; Greta by Texas Co.; Refugio by Humble; Tomball by Humble and Magnolia; LaFitte by Texas Co.; Bosco by Pure; Evangeline and Welsh by Stanolind Oil & Gas Co.; Livingston by Shell Petroleum Corp.

North Louisiana and Arkansas

Smackover, all grades (Jan. 10, 1936)*	$ .75
Smackover, all grades (Jan. 9, 1936)†	.80
Tullos and Urania (Jan. 10, 1936)	.97
Nevada, Ark. (Jan. 10, 1936)	.65
El Dorado East Field (Jan. 16, 1936)	.75
Converse, Holly, Pleasant Hill and Zwolle (Jan. 10, 1936)*	1.10
Lisbon, Ark. (Jan. 10, 1936)*	1.10
Elm Grove, La. (Jan. 10, 1936)	.80

*Standard Oil Co. of Louisiana, Gulf Refining Co., Louisiana Oil Refining Co., Texas Co. (effective January 14) and Magnolia Petroleum Co. (effective January 16). Urania by H. L. Hunt Co. and Louisiana Oil Refining Co. Nevada by Standard of Louisiana. El Dorado East field by Magnolia Petroleum Co. Phillips Petroleum Co. (effective January 17), posts 75 cents for all grades in Union and Ouachita Counties, Arkansas.

Eastern States

TIDE WATER PIPE CO.
(Effective Jan. 13, 1936)

Bradford, Pa.	$2.45
Allegany, N. Y.	2.45

SOUTH PENN OIL CO.
(Effective Jan. 13, 1936)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	2.45
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2.17
Pennsylvania Grade Oil in Eureka Pipe Line lines	2.13
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.97
Corning Grade Oil in Buckeye Pipe Line Co.'s lines	1.43

PENNZOIL CO.
(Effective Jan. 13, 1936)

Pennsylvania Grade Oil in National Transit Lines:	
Group A — Includes Cochran, Franklin, Hamilton and Doolittle districts.	2.41
Group B — Includes Titusville district.	2.41
Group C — Includes Turkey and Tidioute districts.	2.40
Group D — Includes Bear Creek and Porkey districts.	2.35
Group E — Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	2.36

Price depends on lengths of pipe line haul to plant at Oil City.

PURE OIL CO.
(Effective Jan. 13, 1936)

Cabin Creek, W. Va.	$2.13
Bradford Hollow, W. Va.	2.13
Kelly Creek, W. Va.	2.13

Canada

Ontario (Sept. 9, 1933):	
Petrolia*	$2.10
Oil Springs	2.17
Turner Valley (Feb. 3, 1936):†	
Clear naphtha	2.70
Discolored naphtha	2.46
Crude oil, 50 gravity	2.32
Crude oil, 45 to 49.9	2.12
Crude oil, 40 to 44.9	1.56

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

Mexico

Panuco*	$ .82

*F.o.b. ship, based on February transactions and exclusive of production and export taxes and bar dues.

R. Olsen, president of the Uscan Oil Co., Oklahoma City, was in New York City on business last week.

W. Z. (Zeke) Miller, geologist of Tulsa, who underwent a serious operation recently at Kansas City, Mo., hospital, has recovered.

Crude Prices by Gravities

Gravity—	Oklahoma, Kansas, and Salt Creek, Wyo.	Central and North Texas	East Central Texas	North Louisiana, Arkansas	Gray County, Texas	Carson and Hutchinson Counties, Texas	Conroe, Texas	West Texas and Lea County, New Mexico	Gulf Coast, Texas and Louisiana	Arabuac and Dickinson, Texas	Iowa and Cameron Meadows, Texas
Below 20	....	....	....	....	....	....	....	....	$.92	....	$.82
20-20.9	....	....	....	....	....	....	....	....	.94	....	.84
21-21.9	....	....	....	....	....	....	....	....	.96	....	.86
22-22.9	....	....	....	....	....	....	....	....	.98	....	.88
23-23.9	....	....	....	....	....	....	....	....	1.00	....	.90
24-24.9	....	....	....	....	....	....	....	....	1.02	....	.92
Below 25	$.86	....	....	$.78	....	....	....	....	....	....	....
25-25.9	.88	....	....	.80	....	....	....	....	1.04	....	.94
26-26.9	.90	....	....	.82	....	....	....	....	1.06	....	.96
27-27.9	.92	....	....	.84	....	....	....	....	1.08	....	.98
28-28.9	.94	....	....	.86	....	....	....	....	1.10	....	1.00
Below 29	.94	$.84	$.81	....	....	....	....	$.75	....	....	....
29-29.9	.96	.86	.82	.88	....	....	....	.76	1.12	....	1.02
30-30.9	.98	.88	.85	.90	....	....	....	.78	1.14	$1.04	1.04
31-31.9	1.00	.90	.87	.92	....	....	....	.80	1.16	1.06	1.06
32-32.9	1.02	.92	.89	.94	....	....	....	.82	1.18	1.08	1.08
33-33.9	1.04	.94	1.01	.96	....	....	....	.84	1.20	1.10	1.10
34-34.9	1.06	.96	1.03	.98	....	....	....	.86	1.22	1.12	1.12
Below 35	....	....	....	....	$.86	$.81	....	....	1.22	1.14	1.13
35-35.9	1.08	.98	1.05	1.00	.88	.83	$1.24	.88	1.22	1.14	1.15
36-36.9	1.10	1.00	1.07	1.02	.90	.85	1.26	.90	1.22	1.16	1.13
37-37.9	1.12	1.02	1.09	1.04	.92	.87	1.28	.90	1.22	1.18	1.12
38-38.9	1.14	1.04	1.11	1.06	.94	.89	1.30	.90	1.22	1.20	1.12
39-39.9	1.16	1.06	1.13	1.08	.96	.91	1.32	.90	1.22	1.22	1.13
40 and over	1.18	1.08	1.15	1.10	.98	.93	1.34	.90	1.22	1.24	1.12

Magnolia Petroleum Co. in the East Central Texas field pays 7 cents per barrel less than above posted prices in that field.

STANDARD OIL CO. OF CALIFORNIA

Crude oil prices at the well effective March 7, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Hillside-Brea Canon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills	Buena Vista Hills Midway-Sunset except Lakeview Area	Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills
14-14.9	$.80	$.79	$.74	$.78	$.79	$.80	$.76	....	....	....	$.80	$.76	$.76	$.77	$.78	....	....	$.65	$.70	$.65	$.70	$.70	....	....
15-15.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.65	.70	.65	.70	.70	....	....
16-16.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.65	.70	.65	.70	.70	....	....
17-17.9	.80	.79	.74	.78	.81	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.65	.70	.65	.70	.70	....	....
18-18.9	.80	.79	.74	.78	.84	.80	.78	....	....	....	.82	.76	.76	.77	.78	....	....	.65	.70	.65	.70	.70	....	....
19-19.9	.82	.79	.74	.82	.87	.84	.81	....	....	....	.85	.76	.78	.77	.78	....	$.70	.66	.74	.66	.74	.71	$.70	....
20-20.9	.85	.79	.74	.85	.90	.88	.84	....	....	....	.88	.78	.82	.77	.80	....	.70	.68	.78	.68	.78	.72	.70	....
21-21.9	.88	.79	.74	.89	.93	.92	.88	....	....	....	.91	.80	.86	.77	.84	$.78	.73	.71	.82	.71	.83	.74	.70	....
22-22.9	.92	.82	.74	.92	.96	.96	.92	....	....	....	.93	.84	.89	.79	.88	.78	.77	.74	.87	.74	.86	.78	.72	....
23-23.9	.95	.86	.77	.95	.99	1.02	.96	$.84	$.79	....	.96	.88	.92	.82	.92	.78	.80	.77	.92	.77	.90	.82	.76	....
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	....	.99	.91	.96	.85	.96	.82	.84	.80	.97	.80	.94	.86	.79	....
25-25.9	1.02	.95	.82	1.03	1.05	1.11	1.03	.93	.83	....	1.02	.95	....	.89	.99	.86	.88	.83	1.01	.83	.98	.90	.82	....
26-26.9	1.04	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	....	1.06	.98	....	.92	1.03	.90	.91	.86	1.06	.86	1.02	....	....	....
27-27.9	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	....	1.02	....	.96	1.06	.95	.95	.88	1.10	.88	1.06	....	....	....
28-28.9	1.14	1.10	.90	1.14	1.16	....	1.14	1.07	.90	....	....	1.06	....	.99	1.10	.99	.99	.91	1.18	.91	1.10	....	....	....
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	....	....	1.09	....	1.03	1.14	1.03	1.03	.94	1.20	.94	1.14	....	....	....
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	....	....	....	1.07	1.17	1.08	1.06	.97	1.25	.97	1.18	....	....	....
31-31.9	....	....	....	....	1.24	Pipe	1.24	1.22	.97	Ship	....	....	....	1.11	1.21	1.12	1.09	.99	1.29	.99	....	....	....	....
32-32.9	....	....	....	....	1.27	Line	1.27	1.27	1.00	....	....	....	....	1.14	1.25	1.16	1.13	1.02	1.34	1.02	....	....	....	....
33-33.9	....	....	....	....	....	....	....	1.32	....	$1.28	....	....	....	1.18	1.28	1.20	1.17	1.04	1.38	1.04	....	....	....	$1.19
34-34.9	....	....	....	....	....	....	....	1.37	....	1.32	....	....	....	1.22	1.32	1.25	1.20	....	....	....	....	....	....	1.22
35-35.9	....	....	....	....	....	....	....	1.42	....	1.35	....	....	....	1.25	....	1.29	....	....	....	....	....	....	....	1.27
36-36.9	....	....	....	....	....	....	....	1.46	....	1.39	....	....	....	1.29	....	1.33	....	....	....	....	....	....	....	1.31
37-37.9	....	....	....	....	....	....	....	1.51	....	1.43	....	....	....	1.32	....	1.37	....	....	....	....	....	....	....	1.35
38-38.9	....	....	....	....	....	....	....	1.56	....	....	....	....	....	1.36	....	1.42	....	....	....	....	....	....	....	1.39
39-39.9	....	....	....	....	....	....	....	1.61	....	....	....	....	....	1.40	....	....	....	....	....	....	....	....	....	1.43
40-40.9	....	....	....	....	....	....	....	1.66	....	....	....	....	....	1.43	....	....	....	....	....	....	....	....	....	....

Newhall, McKittrick, Kern River and Round Mountain 70 cents for all grades. Kern Front 70 cents for all grades.

Market Record of Active Oil Stocks Listed on New York Stock Exchange

Compiled by Carl H. Pforsheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1936 High	1936 Low	Week ended April 18 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	Dividends paid in 1935	1935 High	1935 Low	1934 High	1934 Low
125½	75	2,500	110½	107¼	108	Amerada Corp.	788,675	N.P.	50cQ	4-30-36	$2.00	80	48½	55⅝	39
35⅛	27⅛	21,000	33	31⅜	32	Atlantic Refining	2,664,904	$25	25cQ	3-16-36	1.00	28	20½	35¼	21½
20	14⅛	30,700	19⅜	17⅞	18¼	Barnsdall Corp.	2,131,090	$5	15cQ†	5-1-36	‡.20	14¾	5⅞	10	5⅞
21⅝	14	54,400	21⅛	19⅛	19⅜	Columbia Gas & Elec.	11,610,036	N.P.	20c	5-15-36	.20	15¾	3⅜	19¼	6⅝
15¼	11⅞	59,200	14½	13⅝	13⅞	Consolidated Oil Corp.	13,983,287	N.P.	25c	4-7-36	.25	12¼	6½	14¼	7¼
38½	33½	17,700	36	34	34⅝	Continental Oil of Delaware	4,682,671	$5	25c	4-30-36	.62½	35	15½	22¾	15¾
34¾	22	5,800	31⅞	30¼	30½	General Asphalt	387,149	$10	25c	12-17-35	.25	22½	11¾	23½	12
12¼	6⅜	26,500	10⅞	9½	10⅛	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	7	1½	5⅝	2½
23	18¼	12,300	22⅜	21¼	21¼	Mid-Continent Petroleum	1,843,872	$10	40cSA	6-1-36	.40	20½	9½	14⅜	9⅛
40	19⅞	3,200	38½	35½	35½	National Supply of Delaware	382,591	$25	....	5-15-31	....	20⅞	9	21¼	10
17½	13½	18,200	14⅞	13¾	14¼	Ohio Oil Co.	6,563,377	N.P.	15cSA	12-14-35	.30	14¼	9¼	15⅞	8½
18	13⅛	2,500	15	14¼	14¾	Pacific Western Oil	1,000,000	N.P.	40c	11-30-34	.25	14	6¾	9⅝	5½
4¼	1⅜	4,200	3⅝	3	3⅛	Panhandle P. & R.	198,770	N.P.	....	.....	....	1⅞	½	2½	⅝
49⅜	38⅛	26,600	47⅝	45½	46⅜	Phillips Petroleum	4,152,836	N.P.	25c†	6-1-36	1.25	40	13¾	20⅜	13⅜
16½	11⅞	12,900	15⅜	15	15½	Plymouth Oil Co.	1,050,000	$5	25c	3-30-35	.25	13	6½	16⅜	7¼
24⅞	16⅝	51,800	22⅜	20¾	21¾	Pure Oil Co.	3,038,370	N.P.	....	9-1-30	....	17	5⅞	14⅞	6⅛
57	48⅜	2,500	56¼	54⅜	56¼	Royal Dutch N. Y. shares	fl. 503,642,000	fl. 100	$1.70	8-1-35	1.70	48½	29½	39⅛	28⅝
43⅝	33¼	5,800	38¾	36⅝	36⅝	Seaboard Oil of Delaware	1,244,283	N.P.	15cQ†	3-14-36	1.00	36⅞	20¾	38⅜	20¾
19¼	15¼	8,100	17⅝	17	17½	Shell Union Oil	13,070,625	N.P.	....	6-30-30	....	16½	5½	11½	6
120	110½	900	115½	114½	115½	Shell Union Oil pfd.	400,000	$100	....	7-1-31	....	111	63⅛	89	57
6¾	5	2,500	5⅛	5	5	Simms Petroleum	461,698	$10	1.00 liq.	1-27-36	11.75 liq.	18¾	4¾	17⅛	7¼
31½	19½	4,500	29⅝	27½	28½	Skelly Oil	1,008,514	$15	....	12-15-30	....	20½	6½	11½	6
17	14	89,800	15⅛	14½	14¾	Socony-Vacuum	31,154,379	$15	20cSA	3-16-36	.30	15¾	10⅝	19⅞	12½
47⅝	39⅞	15,300	44¾	43⅛	43⅛	Standard Oil of California	13,102,900	N.P.	25cQ†	3-16-36	1.00	41⅛	27¾	42⅞	26½
40⅛	32¾	20,300	38⅝	37⅝	37½	Standard Oil (Indiana)	15,215,677	$25	25cQ	3-16-36	1.00	33⅜	23	32¾	23¼
30	25	No sales ..	..	..	..	Standard Oil of Kansas	200,000	$10	50cQ	10-31-34	....	32	20	41	26
70	51⅛	65,700	65¾	62½	63⅝	Standard Oil of New Jersey	25,856,081	$25	50cSA†	12-16-35	‖1.25	52⅜	35¾	50⅛	39¼
91	72	700	85	84½	84½	Sun Oil	1,733,013	N.P.	25cQ	6-15-36	$1 & 7% Stk.	77	60½	74¼	51½
39½	28⅞	39,100	38¾	37½	38⅛	Texas Corp.	9,340,069	$25	25cQ	4-1-36	1.00	30¼	16½	29⅜	19⅝
15¼	7½	17,800	12¼	10⅞	11¾	Texas Pacific Coal & Oil	880,703	$10	....	12-31-29	....	9¼	3¼	6½	2½
19⅛	14¾	25,900	18⅛	17	18	Tide Water Associated	5,642,342	N.P.	15cQ	6-1-36	....	15⅞	7⅝	14⅜	8
106½	100⅝	900	105¾	105	105¾	Tide Water Associated pfd.	626,221	$100	$1.50Q	4-1-36	$6.50	104½	84	87	64½
28½	23⅛	12,800	26	25	25	Union Oil of California	4,386,070	$25	25cQ	5-9-36	1.00	24	14¾	20½	11½
31⅝	22⅝	400	26⅝	26	26	Union Tank Car Co.	1,200,000	N.P.	30cQ	3-2-36	1.20	26½	20⅞	25¾	15⅝
5¼	2¾	11,200	5	4	4⅝	Wilcox Oil & Gas	424,839	$5	....	5-10-28	....	3⅛	1	5¾	2

•Ex-dividend. †Plus extras. ‡Also 50 per cent in stock of Barnsdall Ref. §Partly on account of accumulation. ‖Dividend 4/75 Mission Corp. paid 3-15-35.

Market Record of Active Oil Stocks Listed on New York Curb

Compiled by Carl H. Pforsheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1936 High	1936 Low	Week ended April 18 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	Dividends paid in 1935	1935 High	1935 Low	1934 High	1934 Low
20¼	13¼	3,100	19⅞	17¾	17⅛	Bridgeport Machine Co.	150,000	N.P.	....	5-1-30	....	14⅛	3¾	3¾	½
50	39¾	150	43¾	42¼	43¾	Buckeye Pipe Line Co.	200,000	$50	75cQ	3-14-36	$3.00	42½	30½	38	26
4⅞	2½	61,100	4¾	3¾	4¼	Carib Syndicate	799,020	25c	....	.....	....	4¼	1⅝	5½	1⅛
124¾	113	450	115¼	113	115	Chesebrough Mfg. Co.	120,000	$25	$1Q†	3-31-36	6.50	157	115	150	116
7⅜	3	117,100	5¼	4¾	5¼	Cities Service	37,804,394	N.P.	....	6-1-32	....	3¼	¾	4¼	1¼
4	1⅛	4,400	3	2⅝	2⅝	Colon Oil	2,200,000	N.P.	....	.....	....	2⅛	½	3¼	½
4⅛	1½	5,600	3⅛	2¾	3	Cosden Oil	399,687	$1	....	.....	....	1½	¼	3⅞	½
34¾	19⅞	8,700	29½	27⅝	27⅝	Creole Petroleum	6,974,356	$5	20c	12-31-35	.20	23¾	10	14⅜	9⅝
12	9	200	11⅝	11½	11⅝	Darby Petroleum	509,696	$5	25cSA	1-15-36	.50	8⅞	4	7½	4⅛
4⅜	1⅞	1,800	4	3⅝	4	Derby Oil & Refining	263,162	N.P.	....	.. ..	....	2	¾	2¼	1
44	39	No sales ..	..	..	..	Eureka Pipe Line	50,000	$50	$1Q	5-1-36	4.00	38	33¼	37	30
98	72	6,000	96	91	91½	Gulf Oil Corp.	4,538,101	$25	25c	4-1-36	....	74¾	50¼	76¾	49¾
76½	62½	4,600	71	67⅝	67⅝	Humble Oil & Refining (new)	8,923,935	N.P.	25cQ	4-1-36	1.25	64	44	49½	33¼
24½	20	12,200	23½	22⅝	23⅛	Imperial Oil of Canada	26,919,871	N.P.	62½cSA†‡	12-2-35	1.25	22½	15⅜	17⅞	12⅝
9¼	5½	500	7½	7	7½	Indiana Pipe Line	300,000	$10	20cSA	5-15-36	.35	6⅛	3⅝	6⅞	3⅝
39⅝	33½	11,800	38⅜	37⅛	37⅛	International Petroleum	14,247,088	N.P.	$1.25†‡	12-2-35	2.50	39¾	28	33⅜	19⅝
15⅛	9⅞	35,200	15⅛	13⅛	14⅛	Louisiana Land & Exp.	3,000,000	N.P.	10cQ	3-16-36	.10	11⅝	4⅜	5	2⅛
15	7⅜	7,400	14	12¾	12¾	Lion Oil Refining	270,000	N.P.	....	10-27-30	....	8¼	3½	6	3⅜
14¼	9⅞	4,800	14⅛	13¼	13¼	Lone Star Gas	5,382,723	N.P.	20cSA	2-15-36	.30	10⅞	4½	8⅜	4¼
8⅜	5	3,800	6½	6	6⅛	Mountain Producers	1,682,182	$10	30cSA	12-31-35	.90	5¾	4⅛	5½	4
23	19¼	1,600	21¼	20⅝	20⅝	National Fuel Gas	3,810,183	N.P.	25cQ	4-15-36	1.25	20	11¾	18¼	13⅛
15⅜	10¼	1,100	12¼	12	12	National Transit	509,000	$12.50	35cSA	12-16-35	.75	10⅝	6¾	9½	7
4½	2⅞	400	4	3¾	3¾	New Bradford Oil	1,445,202	$5	10cSA	5-15-36	.20	3¼	2	2½	1¾
6⅝	1⅝	300	4½	4¼	4¼	New Mexico and Arizona	1,000,000	$1	....	.....	....	2½	1	2¾	1
6¼	4½	No sales ..	..	..	..	New York Transit	100,000	$5	15cSA	4-15-36	.30	4⅞	3	4¾	3
9¼	7	300	7⅜	7¼	7⅜	Northern Pipe Line	120,000	$10	25cSA	2-2-36	.50	8	5¼	7	4⅝
6¼	3¼	50,100	6	5¼	5⅝	Pantapec Oil	1,608,700	N.P.	....	.....	....	4⅜	1¾	2⅝	⅞
19¼	4½	40,400	17¾	15¼	15½	Root Petroleum Co.	336,045	$1	....	.....	....	5	1½	....	....
4¾	1⅞	3,500	4	3½	3¾	Ryan Consolidated	296,931	N.P.	....	.. ..	....	2½	⅝	3⅜	⅞
10	7	2,300	8¼	8	8	Salt Creek Producers	1,496,859	$10	40cSA	12-31-35	1.20	7½	5½	7⅞	5½
40½	32½	2,200	39½	37¾	37¾	South Penn Oil	1,200,000	$25	50c†	3-31-36	1.35	34½	21⅝	26½	17½
7⅞	4⅜	100	5½	5½	5½	Southern Pipe Line	100,000	$10	15cSA	3-2-36	.30	5	3⅞	5½	3½
56	54	No sales ..	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	$1Q	4-1-36	5.00	56	44¼	47	41
23⅜	18	4,100	18¼	18	18	Standard Oil of Kentucky	2,604,790	$10	25cQ†	3-16-36	1.25	24	18	18⅜	14⅝
14⅝	11½	400	13¾	13½	13¼	Standard Oil of Nebraska	188,403	$25	....	6-20-34	....	12	7¾	16⅞	8¼
36¼	21¾	3,100	36¼	33⅜	33⅜	Standard Oil of Ohio	753,740	$25	....	1-3-33	....	23⅝	11½	28½	12¼
5	2⅝	113,600	5	4½	5	Sunray Oil	1,610,810	$1	....	4-15-31	....	2⅞	⅞	2	¼
9¾	6	2,700	7	6¾	6¾	Texon Oil & Land	336,028	N.P.	15cQ	3-31-36	.60	6⅞	5	11	4⅝
7½	4½	8,100	5¾	5	5¼	Texas Gulf Producing Co.	888,072	N.P.	....	12-29-34	....	4¾	2½	7	3⅜

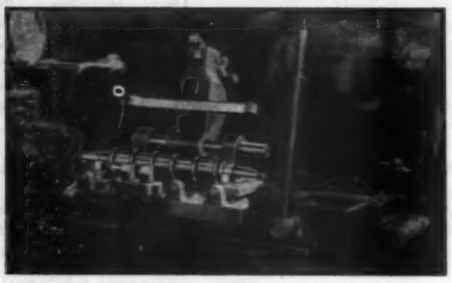
•Ex-dividend. †Includes extras. ‡Payable in Canadian funds.

Note.—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

NEW OR IMPROVED EQUIPMENT

Special Work-Holding Fixture for Use on Landis Machine

A work-holding fixture designed to maintain concentricity between both ends of a threaded part has been placed on the market by Landis



Machine Co., Waynesboro, Pa., for use on its threading machines. The illustration shows this fixture applied to a Landis single-head leadscrew motor-driven threading machine as used for threading both ends of a diesel engine camshaft. A seven-eighths inch hardened and ground Lanco head is used for cutting the threads. In this case especially close tolerances were placed on the concentricity of the two ends. To insure this concentricity the camshaft is held in V grips made of hardened steel and gripped on the bearing surfaces at each end of the camshaft and is clamped in position by a special self-aligning clamp which is shown in the open position.

The fixture is attached to the carriage of the machine and can be adjusted to obtain the required alignments. The rear locating plate can be adjusted for different lengths of camshafts. The design of the fixture is so flexible that it can be adapted readily for holding other types of work requiring the threading of both ends in true alignment and can be furnished for any size Landis threading machine.

Here and There With Men Who Manufacture Equipment

Walter O'Bannon Co. of California has been established as West Coast distributor for O'Bannon products. E. P. Oldham, associated with the Walter O'Bannon Co. for the past 10 years and California representative for 7 years, is vice president and manager of the new organization.

Demand from customers for trained operators and specialists to maintain diesel engines has resulted in an oil engine school being established by the Waukesha Motor Co. for the technical staff of the company's clients and actual operators of Waukesha oil engine powered equipment.

Foote Brothers Gear & Machine Corp. has taken over all activities and assets of Foote Brothers Gear & Machine Co., 5301 South Western Boulevard, Chicago, marking completion of a period of reorganization and consolidation started in August, 1932.

Ernest F. Talmage has been engaged by National Tube Co. as a special representative for seamless alloy tubes in the refining field and for general industrial purposes. Mr. Talmage was for years with the Crucible Steel Co. and Timken Steel & Tube Co.

Lane-Wells gun perforating equipment has been shipped to the Swedish Diamond Boring Co., in Stockholm, Sweden, for use in Germany and Poland. L. C. Tilbury and C. E. Clauser, representing Lane-Wells, have left for Colombia, South America, to carry out a perforating program for Tropical Oil Co.

The Lincoln Electric Co., Cleveland, Ohio., has moved its Pittsburgh office from 323 Fourth Avenue to larger quarters at 926 Manchester Boulevard.

Melvin Giersbach left recently for Shanghai, China, to assume his new post as export representative of the Four Wheel Drive Auto Co. of Clintonville, Wis., and Kitchener, Ontario.

Alco Products, Inc., has moved its New York offices to the Hudson Terminal Building, 30 Church Street.

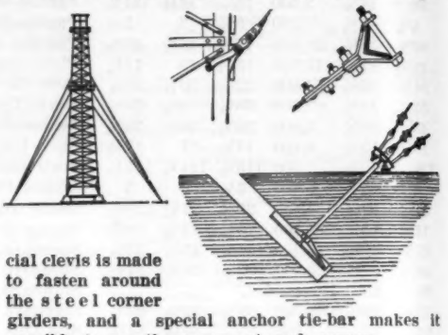
Noland Co., Inc., Washington, D. C., has been appointed Toncan iron sheet distributor, according to an announcement by N. J. Clarke, vice president in charge of sales of Republic Steel Corp., Cleveland, Ohio.

Ted Sawyer, of Alexander Anderson, Inc., has been transferred from the Long Beach division to the Bakersfield division. He will continue his work in underground surveys of oil wells and directional drilling.

William F. (Bill) de Hass, formerly manager of the Atlantic, Pacific & Gulf Refining Co., Wichita Falls, Tex., has joined Industrial Supply Co., whose headquarters now are in Wichita Falls. He will represent the company in South Texas, working out of the Freer branch in Duval County.

Guys and Well-Servicing Units Held in Place by Anchors

Never-Creep anchors, manufactured by A. B. Chance Co., Centralia, Mo., are used by many oil producing companies for derrick guy lines. A special clevis is made to fasten around the steel corner girders, and a special anchor tie-bar makes it possible to use three guys at each corner.



Well-servicing units for pulling rods and tubing must be anchored to hold them firmly in place. In cases where the pull is made through a sheave in the derrick the sheave also must be anchored. Never-Creep anchors are particularly fitted for these uses, according to the company, because of varying installation conditions and because of the direct pull the anchor affords against solid earth.

The Hill Diesel Engine Co., Lansing, Mich., has appointed James M. Degnan general sales manager.

Emsco Chooses Two New Directors

W. D. DAVIDSON

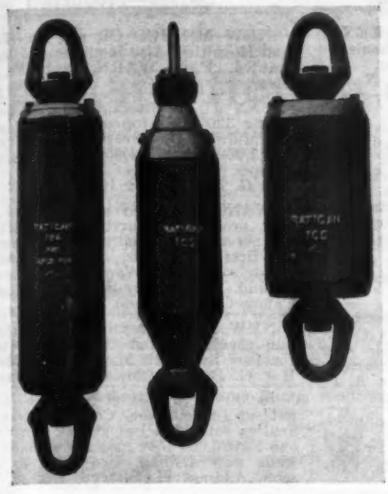
ERNEST N. PUETZ

Stockholders of the Emsco Derrick & Equipment Co., Los Angeles, Calif., have elected two new directors, Ernest N. Puetz and W. D. Davidson. Mr. Davidson succeeds the late Edwin W. Goeser. In 1923 he joined the Emsco Tool Co., which was merged with the Emsco Derrick & Equipment Co. on January 1, 1926. Mr. Davidson is the chief engineer for the mechanical division.

Mr. Puetz, who succeeds S. P. Farish in the office of director, is controller and assistant secretary and assistant treasurer. Prior to 1927 he was employed by the Blaw-Knox Co. at Pittsburg, Pa., for 15 years as assistant controller and special assistant to the operating vice president.

Weights for Sucker-Rod Lines Adjusted to Point Desired

Ratigan sucker-rod line weights, manufactured by J. P. Ratigan, 1213 Santa Fe Avenue, Los Angeles, Calif., are made of electric steel castings and line shafting 1⅝ inches round. A ball-bearing swivel is at each end of the weight. A C link attached to each end of the weight is opened



automatically by use of a quick-acting safety-pin. No. 104 weight is 8 inches outside diameter, No. 102 is 6 inches and No. 100 is 10 inches.

The No. 100 weight empty is 118 pounds, and can be built up to 500 pounds by using sand, scrap iron, babbitt or lead. The same thing can be done with the No. 104 weight. The No. 102 weight weighs 110 pounds empty, and can be built up to 300 pounds. All are hollow inside.

Bulletins, Booklets and Other Literature for the Trade

Roots-Connersville Blower Corp., Connersville, Ind., has issued a bulletin on Roots-Connersville water systems.

Hughes Tool Co., Houston, Tex., has published a pamphlet on "Care and Operation of Tool Joints." It illustrates and describes various kinds of tool-joint failures traceable to improper care and attention after being placed in service.

An engineering leaflet 2218 on the "Ro-Twin" compressor, describing and illustrating this innovation in rotary compressor design, may be obtained from Allis-Chalmers Manufacturing Co., Milwaukee, Wis.

Ingersoll-Rand Co., 11 Broadway, New York, has for distribution an unusually attractive booklet, illustrating in a novel way its new channel valve for compressors.

Blue Book Part 3, a booklet on industrial indicating and recording thermometers, may be obtained by writing to H-B Instrument Co., Inc., 2518 North Broad Street, Philadelphia, Pa.

"Gun Perforating Two Miles Down" is the lead article in the current number of Hot Shots, published by the Lane-Wells Co., Los Angeles, Calif.

The current issue of Dutch Boy Quarterly, published by National Lead Co., 111 Broadway, New York, contains a helpful article on protecting encased steel.

A bulletin on switchgear panels for engine-driven generators is announced by General Electric Co., Schenectady, N. Y.

A new handbook on "Wire Lines for Drilling," obtainable from Macwhyte Co., Kenosha, Wis., contains interesting information on how wire lines are manufactured and on sheave diameters, proper working loads, working diameters, lubrication, kinking, unreeling and uncoiling, capacity of drum or reel, correct spooling of rope on drum, fleet angle, efficiency of wire rope attachments, and sheave or groove tolerances.

A guide to lower tooling costs with shielded arc-welded steel jigs and fixtures is presented in an eight-page bulletin prepared for distribution by the Lincoln Electric Co., Cleveland, Ohio.

Available on request through the Linde Air Products Co., 30 East Forty-second Street, New York, is a 12-page illustrated booklet on the oxy-acetylene welding of brass and bronze.

The International Nickel Co., Inc., 67 Wall Street, New York, is mailing on request a chart showing the approximate relations between Brinell, Rockwell and Shore hardness values and the corresponding tensile strength, and also handy circular charts serving as guides in the selection of nickel alloy steels and nickel cast-irons.

Oil Well Supply Co. has prepared an eight-page bulletin on the No. 300 crown block, a companion to the "Oilwell 80" streamline traveling-block.

A new 40-page illustrated catalog, No. 1520, has been published by Link-Belt Co., Chicago, Philadelphia and San Francisco, on Link-Belt antifriction bearing units available in streamlined pillow-block, hanger, takeup, flanged, duplex and special mountings.

"Read the Record" is the title of a 28-page profusely illustrated booklet published by Cummins Engine Co., Columbus, Ind., showing a wide variety of conditions under which Cummins-diesel engines are operating.

The Bristol Co., Waterbury, Conn., announces publication of a new thermometer catalog, containing 88 pages of information concerning the theory and practice of modern-day thermometry.

Edward Valve & Manufacturing Co., Inc., East Chicago, Ind., has issued a handbook on Edward blowoff valves identified as catalog No. 11-D.

Among interesting articles in the current number of Industrial News, published by the Gates Rubber Co., Denver, Colo., is one entitled "Pumping Oil Well in Middle of River Proves Test of Ingenuity."

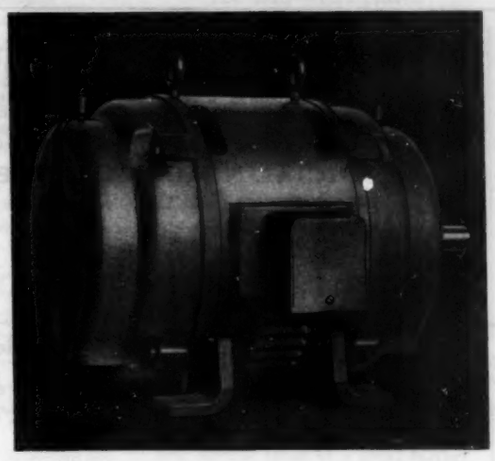
The Thor Model 7 spray-gun is the subject of a bulletin announced by Binks Manufacturing Co., 3114 Carroll Avenue, Chicago.

The latest issue of the Rex World, published by Chain Belt Co., Milwaukee, Wis., and described by that company as a "cross between a house organ and an illustrated news publication," presents in an attractive way the advantages of chain and belt conveying machinery made by the company.

Motor Is Protected From Splash But Has Proper Ventilation

The Imperial Electric Co., Akron, Ohio, announces a complete line of splashproof squirrel-cage motors in all ratings from one-half to 200 horsepower for constant and multispeed, continuous or intermittent duty in all voltages and cycles, for any torque and starting current.

The construction provides protection to the inner parts from splash or spray and yet permits proper ventilation by small openings in the bottom of the end brackets for the air intake and louvres in the frame cover underneath the motor for the air exit.



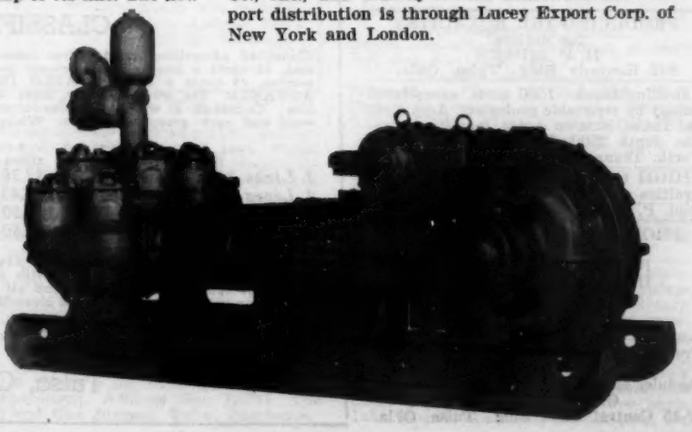
Development in B&W Seamless Alloy Tubes Is Introduced

Babcock & Wilcox Tube Co., Beaver Falls, Pa., announces commercial production of seamless tubes and pipe of a highly alloyed steel containing 25 per cent chromium and 20 per cent nickel. These products are available hot-finished in sizes up to 6 inches outside diameter and cold-drawn in smaller sizes. The company has been closely identified with the development of alloy-steel tubular products for severe service requirements and extends its range of analyses with this new alloy, which is being marketed under the trade name B&W Croloy 25-20.

This alloy has a high degree of oxidation resistance and is suitable for continuous operation at temperatures up to approximately 2,100° F. It is a ductile material, possessing greater creep strength and resistance to oxidation at high temperatures. It is expected to find a field of usefulness in high-temperature cracking, polymerization and other refinery operations.

Wheland Announces New Type Slush-Pump

The Wheland Co., Chattanooga, Tenn., has added a new power slush-pump to its line. The new unit is type HP-11,000, 7¼-inch by 14-inch, and of the same general construction and design as the type HP 15,000, 7¾-inch by 18-inch. It has crank-type power end and is completely enclosed, all wearing parts running in an oil bath. Pinion and crankshafts are mounted on Timken roller bearings. The water end is recommended for 2,000 pounds working pressure. The new pump, along with all other Wheland-Lucey rotary drilling equipment is distributed by Lucey Products Corp., Houston Oil Field Material Co., Inc., and Murray-Brooks Hardware Co. Export distribution is through Lucey Export Corp. of New York and London.



CLASSIFIED ADVERTISING

For Sale—Maps

Oil Production Map Oklahoma City Extension

Shows production up-to-date, top of sand and total depths on completions. Covers Sections 14, 15, 22, 23, 26, 27, and N½ of Sections 34 and 35, Twp. 12N, Rge. 3W. Scale 400' to the inch and all locations have been scaled in. Size 32 x 48 inches. Price $7.50, blue line on paper; $10.00, blue line on cloth.

OFFICIAL NOMENCLATURE MAPS

KANSAS—OKLAHOMA—TEXAS.

Shows oil and gas pools in colors, with index giving official names of each pool.

E. C. JACOBSON

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Royalties—Production

Brokers—Salesmen

Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Securities and Exchange Commission. Inquiries invited.

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I BUY AND SELL oil royalties and producing wells, East Texas field. B. A. SKIPPER, Longview, Texas.

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OIL REPORT SERVICE—Oklahoma, Kansas, Texas Panhandle. Oklahoma State Drilling Reports. Write for particulars. OIL INFORMATION BUREAU, 501 Petroleum Bldg., Okla. City.

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Bosco, Van, Rodessa, West Texas.
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Leases—Production

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DRILLING BLOCK Young County, Texas, 100 acres top of structure; 750 ft. first oil sand; 40 gravity oil; cheap drilling near producing wells.
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Drilling Block—3,000 acres in Texas Permian Basin. On line between two shallow pools: Humble holds two large blocks in close proximity. Address H. B. Opp, Burnet, Texas.

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CONSIDER drilling proven acreage of merit, Kans., Okla. or Tex. on interest basis. Submit full details first letter. Box 5005, Shawnee, Oklahoma.

FOR SALE, OIL AND MINERAL RIGHTS, under lands in Eastern Colorado, leased in solid blocks, largely by major companies; taken after seismic surveys and core drillings. Titles clear. Get ready for the next big oil play. Warren Shamburg, Burlington, Colorado.

Leases—Production

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SAN JUAN Basin, New Mexico, Offering 320 acres top of structure including Midwest Discovery well, high gravity oil 1,000 feet; wonderful deal for developer or promoter.
Roy G. Barton, Box 191, Clovis, N. Mex.

WANTED—Party to drill Lease adjacent production Burrton Field, Kansas, on percentage base, will pay Premium for first production. Also drill well defined structure, Wyoming. Majors all around. I need Crude. F. B. Renfrow, Canon City, Colorado.

NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton, Clovis, New Mexico.

10,000 Acre Lease for Sale—5-year paid up in Schleicher County, Texas. Big drilling campaign just getting under way, one 12,000,000 foot gasser completed, two wells now drilling, two more to start soon, Address H. B. Opp, Burnet, Tex.

LANDS, Leases, Royalties, anywhere, bought, sold. Lands, $2 acre, up. Leases 25c acre, up. Advise needs. American Investment Co., Houston, Texas.

For Sale, Lease or Deed, Alabama acreage, Marion Co., geological place to drill. D. Cooper, Hamilton, Alabama.

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Ranches and Farm Lands

1430 ACRE PLANTATION IN RED RIVER VALLEY ADJOINING NEW CHEYNEVILLE OIL FIELD

This plantation is located between Cheyneville and Bunkie, La. on concrete Highway No. 71. Improved with beautiful colonial residence, set in grove of magnificent trees. It is traversed by Bayou Boeuf giving perfect natural drainage. Very fertile type of Red River land that makes bale of cotton per acre, finest potato and sugar cane land. Within two miles of sugar mill.

The plantation is located only 1½ miles from new proven Cheyneville oil field where they have recently brought in many new producing wells and only one dry hole. The field is not on a salt dome and it is predicted that this plantation will be in direct line of production. Adjoining farm was leased at $35 per acre for oil and gas rights. Land within one mile has brought $100 per acre for royalty rights. Neither lease nor royalties have been sold on this farm.

Place belongs to large Insurance Company and they will either sell place as a whole, make oil lease or sell royalty. Land with 1/16th oil reservation can be sold on attractive terms at $50 an acre.

Also 100 other farms and plantations in Louisiana for sale.

THE NEELY BOWEN COMPANY
67 Madison Avenue, Memphis, Tennessee

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OF ROYALTY investors by deed, guaranteed. Oil Industry Mailing List Co., Tulsa Loan Building, Tulsa, Oklahoma.

ROYALTY OWNERS
Names and addresses in any State.
Royalty Lists. Box 105, Ft. Worth.

UP TO DATE typewritten list of 580 Salesmen and dealers offering oil royalties, stock, certificates, and leases. All located in New York State. All have permits from security commission, Price Seven Dollars sent on receipt of remittance, or to bank with draft attached. All names guaranteed.
GEORGE E. DU BOIS
954 Kenyon Ave, Plainfield, New Jersey.

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	1 time	2 times	3 times	4 times		1 time	2 times	3 times	4 times
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We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

CLASSIFIED ADVERTISING

For Sale—Equipment

Special Offering of Pumps

We are offering a miscellaneous assortment of pumps which have accumulated in our stocks recently and will be sold at bargain prices for quick sale.

1—Worthington Duplex Pump, size 18x5x18, Serial No. 27874S, 4" suction, 4" discharge.

1—Worthington Duplex Pump, size 18x5x18, Serial No. S29037, 4" suction, 4" discharge.

1—National Transit Duplex Pump, size 18x5x18, Serial No. 20511, 6" suction, 4" discharge.

1—Worthington Duplex Pump, size 14x8½x12, Serial No. 678832W, 6" suction, 6" discharge.

1—5" Worthington Centrifugal Pump, Class B-5, Serial No. 812212W, 715 g.p.m., 1,150 r.p.m., 98 ft. hd., 8" suction, direct connected to General Electric Induction motor, Model 16 and 72, Type KT 532 Block 6-30-1,200, Form B, Volts 2,200, amp. 7—No. 4565534, 30 H.P. continuous 40, 3 ph., 60 cy., 1,160 r.p.m.

1—3" Byron Jackson Centrifugal Pump, multi-stage, Serial No. 99714, 1,750 r.p.m., dated 1/19/1928, direct connected to General Electric Induction motor, 200 H.P., type KTP 557, Block 4-200-1,800 Form E, 440 V, 224 amps., No. 4834558, 3 ph., 60 cy., r.p.m. full load 1,760, Model 17526 with General Electric manual control compensator type CR 1,030, Cat. No. 2019085 G 4.

1—3" Byron Jackson multi-stage centrifugal pump, 1,750 r.p.m., Serial No. 99714, dated 1/18/1928 direct connected to General Electric Induction motor, 200 H.P., Model 17526, Type KTP, 557 Block 4-200-1,800 Form E, 3 ph., 60 cy., 440 V., 224 amps., speed full load 1,760 r.p.m., No. 4948262 —With General Electric manual control compensator type CR 1034, Cat. No. 2019085 G 4.

1—Worthington Duplex (piston type) Pump, Size 10x12, 8" suction, 6" discharge, Serial No. 280029 direct connected to General Electric Induction Motor 25/12.5 H.P., Model 17 E 294, Type KT 536, Block 16-25-900-450, Form B, 440 volts, amps. 32/531, No. 4950630.

2—Pacific, 8 stage, high pressure, solid shell Pumps, minimum capacity 2,000 bbls., 350 lbs. per 24 hours to maximum capacity 8,000 bbls., at 705 lbs. No power.

2—LeCourtnay Centrifugal Pumps, size 5x4 horizonal split shell, 3 stage, 300 g.p.m., 400 ft. hd. No power.

2—Byron-Jackson Centrifugal Pumps, 3 stage, size 3", 160 g.p.m., 1,110 ft. hd. No power.

1—Kinney Gear driven Rotary Pump, size 6", 725 g.p.m., 200 lbs. pressure, type SD 888, Serial No. 8497. No power.

1—Union Centrifugal Pump, 5 stage, size 4", Class M, serial No. 136510, 225 g.p.m., 427 ft. hd. direct connected to General Electric Motor, 40 H.P., 3 ph., 60 cy., 220 volts, 1,740 r.p.m.

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Main Office—1446 Guinotte Ave., Kansas City, Mo.

Branches

Sapulpa, Okla. Arkansas City, Kans. Pyote, Texas

For Sale—Equipment

Everything in Refinery Equipment

The Altitude Refinery at Chanute, Kansas.
The Marathon Refinery at Boynton, Oklahoma
The Sinclair Refinery at El Paso, Texas.

Everything for sale in these plants. ALL of our EQUIPMENT is RECONDITIONED. Inventories on request. Pressure tanks and Hot Oil Pumps our specialty. All sizes pipe, valves and fittings.

W. C. BERRY Wire — Phone — Write H. J. GALAMBA

SONKEN-GALAMBA CORPORATION

64 North Second Street Kansas City, Kansas.

Steel Storage Tanks

We will erect latest type 55,000 bbl. all steel storage tanks at a great saving.

Over 500 tanks on hands from 500 bbls. to 80,000 bbls. Ready for delivery.

50—55,000 Bbl. tanks now being cut down, Haynesville, La. Will sell complete tanks or sheets.

Wire—Phone—Write—W. C. Berry

SONKEN-GALAMBA CORPORATION

64 North Second Street Kansas City, Kansas.

STEEL SHEETS

$\frac{3}{16}$ to ½ inch included all sizes, guaranteed like new. Any quantity for immediate shipment.

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Extra Heavy, any size, delivery Kansas City, Tulsa, Dallas, Houston, Wichita. Wire, write or phone

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DIESEL ENGINE for sale. 225 H.P., 360 R.P.M. Chicago Pneumatic Tool Engine Direct Connected to G.E. 2,300 Volt, 187 K.V.A. Generator. Purchased Summer 1933. Run less than thirty-five hundred hours. Engine junk. United Power Company, 1105 First National Building, Oklahoma City, Oklahoma.

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air Compressor. Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list. Terms to suit.
CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St. Cincinnati, Ohio.

SEVERAL USED ROTARY RIGS
Spudders and Drilling Machines.
Several Steel Derricks & Rotary Equip.
J. S. Daniel, Beacon Bldg., Tulsa.

FOR SALE: 400 ampere portable welder. No. 25 Star drilling rig. 1,000 barrel tube still. Noel Owens, Chanute, Kansas.

FOUR Lincoln Engine driven arc welders. A-1 condition. Stationary type. Service Co., 3732 Cedar, Cleveland, Ohio.

FOR SALE: 20 Bbl. lube plant, complete with two filter presses. Sheet iron bldg., 20x30. Ideal lube blending plant. Located Okla. City. Address 1602 Ramsey Tower, Oklahoma City, Oklahoma.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Help Wanted

Engineer Wanted

Engineer experienced in designing oil field drilling equipment. Good opportunity for competent man. Give full particulars of experience and education which will be considered strictly confidential. The men in our Company are acquainted with this advertisement. Address Box H-221, The Oil and Gas Journal, Tulsa, Oklahoma.

WANTED — Sales representative to handle line of pumping units in Mid-Continent territory. Please state previous experience in first letter. Address Box H-235, The Oil and Gas Journal, Tulsa, Oklahoma.

WANTED—Sales representative to handle line of oil country chain on commission basis in Oklahoma and Kansas with headquarters in Tulsa. Representative with few non-conflicting lines preferable. Address Box H-236, The Oil and Gas Journal, Tulsa, Oklahoma.

WANTED for sales work in Mid-Continent territory. Technically trained engineer with practical experience in design, field or shop. Age 25 to 30 years. Give full details in reply which will be treated confidentially. Address Box H-233, The Oil and Gas Journal, Tulsa, Oklahoma.

Help Wanted

EXECUTIVE WANTED

Man to head gas division for large oil corporation. Must be well qualified by experience in both sales and purchases of dry gas as well as manufacture of natural gasoline. Salary commensurate with training, experience and ability. Give full particulars which will be held strictly confidential. Address Box H-242, The Oil and Gas Journal, Tulsa, Oklahoma.

Situations Wanted

Manufacturers' Representative, well acquainted in Mid-Continent area, wants side line. Straight commission proposition only. Address Box H-116, The Oil and Gas Journal, Tulsa, Oklahoma.

FIVE YEARS' practice oil attorney; extensive office, sales experience. Want oil connection leasing or field work. Age 32; unmarried; go anywhere. Address Box H-240, The Oil and Gas Journal, Tulsa, Oklahoma.

REFINERY ENGINEER—Six years experience in operation and maintenance of distillation, cracking, and lubricating oil processes. M.E. Degree. Best references. Want a job with opportunity for advancement. Address Box H-241, The Oil and Gas Journal, Tulsa, Oklahoma.

Business Opportunities

GEOLOGIST desires connection on percentage basis plus expenses. Highest credentials. Address Box G-823, The Oil and Gas Journal, 415 Lexington Avenue, New York City.

HAVE rich gold mine in South America with plenty good ore. Want to meet party able to finance equipment. $30000 required. No triflers. Address Box H-117, The Oil and Gas Journal, Tulsa, Oklahoma.

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REGISTERED PATENT ATTORNEYS
United States and Canada.
Before disclosing your invention to anyone, send for blank form:
"Evidence of Conception."
Instructions "How to Establish Your Rights" and complete information FREE!
LANCASTER, ALLWINE & ROMMEL
418 Bowen Building,
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Financing

JAMES E. MILLER, 604 W. Seventh St., Tulsa, Okla., will aid in financial marketing problems. Fee basis.

WANT LOAN of one hundred thousand dollars, for 5 years, to Manufacture and sell new "Hydraulic Rotary Drill." Will give 5% interest plus twenty five thousand dollars bonus. Roscoe P. Ross, Mound City, Missouri.

PROSPECTUSES prepared and deals shaped up for registration or exemption under Federal Security Act. Fee basis. John Morris, Box 5411, Philadelphia, Pa.

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Oil Man's Calendar

April

20-25—Houston, Tex., Oil Equipment and Engineering Exposition.

May

5-8—Dallas, Tex., A.G.A. Natural Gas Department, Baker and Adolphus Hotels.

13-15—Tulsa, midyear meeting, American Petroleum Institute, Mayo Hotel.

13-15—Tulsa, Natural Gasoline Association of America, fifteenth annual convention, Hotel Tulsa.

15—Tulsa, Institution of Petroleum Technologists, American Meeting, Mayo Hotel.

16-23—Tulsa, International Petroleum Exposition and Congress.

21—Tulsa, Independent Petroleum Association of America, midyear meeting.

22—Tulsa, National Stripper Well Association.

25-27—New York, A.G.A. Production and Chemical Conference.

25-28—New Orleans, La., National Association of Purchasing Agents Convention.

29-31—Dallas, Tex., National Oil Scouts Association, Baker Hotel.

June

17-20—Dallas, Tex., American Society of Mechanical Engineers.

18-19—State College, Pa., Pennsylvania Grade Crude Oil Association, thirteenth annual meeting.

June - July

29-July 3—Atlantic City, N. J., A.S.T.M., annual meeting.

September

7-12—Pittsburgh, Pa., American Chemical Society, semiannual meeting.

?—Tulsa or Oklahoma City, American Petroleum Institute, Division of Production, Mid-Continent district.

October

?—Cleveland, Ohio, American Institute of Mining and Metallurgical Engineers.

November

9-12—Chicago, American Petroleum Institute seventeenth annual meeting.